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THE RELATION OF LABYRINTHINE TONUS TO MUSCLE TONUS

J. GORDON WILSON, M.D.

CHICAGO

It is generally recognized that afferent nerve impulses coming from the labyrinth act reflexly on certain muscles of the body to keep these muscles in a continuous state of tension. Ewald[1] noted that, after unilateral labyrinthine destruction, there was a lack of precision and a diminution of strength in certain striated muscles, and formulated his hypothesis of labyrinthine tonus. It is also recognized that nerve impulses modifying this state of tension may come from other peripheral sources as well as from certain areas in the central nervous system. Muscle tonus is a subject of great complexity and still of much obscurity, though recent work has helped to a better understanding. A knowledge of what tonus implies is of fundamental importance to an understanding of the physiology of the labyrinth. On such an understanding must be based the interpretation of many of the disturbances observed in pathologic lesions involving the vestibular nerve endings and of its central pathway, and the just appreciation of the value of many of the tests we employ in normal and defective labyrinthine conditions.

Two questions present themselves: (1) What is muscle tonus? (2) What relation has the labyrinth to muscle tonus?

MUSCLE TONUS

Tonus is the slight persistent tension which is characteristic of healthy muscle, and its loss or diminution is shown by an alteration in the normal attitude or gait or muscle power of the animal. It is present in unaltered amount in various lengths of the muscle, and so a muscle may carry the same weight with different lengths.

A basic conception of muscle tonus appears to be best obtained by observing the action of certain muscles in invertebrates. In many of these, certain muscles are differentiated to give movement, while others are differentiated to secure a persistent tension or fixation. An example of this differentiation is seen in the adductor muscles of mollusks. In mollusks an elastic ligament opens the shell, an adductor muscle closes it. It is common knowledge how difficult it is to open the shell of a bivalve, such as the oyster shell. There is sufficient evidence to show that this is not due to the action of a powerful muscle. The following account of von Uexküll's work from Bayliss[2] gives one a clear conception of this action and an interpretation of it:

> If one takes a normal pecten out of the water, it gives two or three flaps with its shells before permanently closing them. If while it is open, a piece of wood is pushed between the shells, these close and hit upon the wood with so powerful a crash that their edges are splintered. The wood is then held as in a vise. One can, however, pull it out by twisting it about backward and forward, and then one is surprised to see that the shell remains motionless, just as would the jaws of a vise if an object clamped between them had been forced out. The shell movement shows not the least degree of elasticity. The muscular fibers seem to have been suddenly frozen solid. If one next tries to open the shell, no effect can be produced, but even the pressure of a finger is sufficient to press them nearer together, and in this position they remain fixed again, so that they cannot be brought back. The nearest mechanical illustration that can be given is that of two racks with saw teeth; these will glide over one another if pulled in the direction of the arrow [diagram, Bayliss, p. 534], but resist any pull in the opposite direction. The fact that the animal itself can allow the shells to open shows that the "catch" can be removed by some means.

Two points of importance must here be noted: (1) If weights be applied to the shell in any degree of this contracture, no increased metabolism and no fatigue can be demonstrated even after days. (2) The muscle of the shell can hold up a weight it cannot raise. In *Pecten* the adductor muscle can be shown to consist of two parts called by von Uexküll the motor muscle and the catch muscle, each with separate nerves. If the catch muscle be cut, the motor muscle when excited can close the shell, which remains closed so long as the stimulation lasts; then the elastic ligament pulls it open. "If the catch muscle be cut through while the shell is closed, the other muscle is unable to keep it closed; whereas if the motor muscle be cut, the shell remains closed."[3]

In *Echinus,* the sea urchin, a similar differentiation of muscle can be seen. The echinus creeps forward by the pull of its tube feet assisted by the action of spines set in ball and socket joints. Each spine is provided with two muscles, one which moves the spine and the other which fixes the spine in the position to which it has been brought by the muscle of movement. In each pull forward the spine is so placed as to prop the weight of the body, and is fixed in a position of advantage to aid further progression.[4]

In vertebrates, no such differentiation of muscles of movement and muscles of fixation can be demonstrated. But a moment's thought will show that there is differentiation or duality of function. As in particular

1. Ewald: Physiologische Untersuchungen über das Endorgan des Nervus Octavus, Wiesbaden, 1892.

2. Bayliss: Principles of General Physiology, London, 1915, p. 534.
3. Bayliss: Principles of General Physiology, p. 536.
4. Sherrington: Postural Activity of Muscle and Nerve, Brain **38**: 203, 1915.

groups of invertebrate muscles so in groups of vertebrate muscles, it is certain one can distinguish two separate functions: (1) movement, and (2) fixation to give a definite and prolonged pose. Certain muscles incline more to one phase than to the other. For instance, certain muscles, e. g., sphincters, appear to be more tension or postural muscles, muscles whose prime function seems to be more to secure a certain permanent fixation of form and pressure than to produce movement. Further, in vertebrates the skeletal muscles are capable of both postural fixation and of motion. Thus, in a definite action one group may show fixation of attitude or posture while another shows movement and definite action, e. g., an animal scratching an irritant off its neck. While the evidence of duality of muscle function in vertebrates appears satisfactorily demonstrated, the evidence in favor of a duality of nerve source for these functions, somatic and sympathetic, does not appear to be established, and will be referred to later.

Experimental evidence placing tonus of muscle on a scientific basis dates back to the article of Brondgeest [5] in 1860. Brondgeest showed that the most important source of tonicity for muscles of the limbs is afferent impulses originating in the limb itself. Sherrington added largely to our knowledge of tonicity by his study of muscle tonus in decerebrate mammals. In decerebrate animals, after section of the brain in front of the corpora quadrigemina, while respiration and pulse are unaffected, certain groups of muscles become rigid—a persistent tonic spasm; the elbows and knees are extended and the head and neck are retracted. The muscles chiefly affected are the extensors of the elbow, knee, shoulder and ankle, and the retractors of the head. The hand and foot are little affected, and the fingers and toes not at all.[6] The decerebration has removed motor control probably from the spinal motor centers, and so the constant tonic reflexes coming chiefly from peripheral sources are allowed full action on the motor centers, and the muscles are seen in a state of uncontrolled tonic activity. Sherrington showed that, in skeletal muscles, the muscle tension we are here concerned with is not uniformly distributed, but is confined to muscles whose function it is to support the body in its normal attitude. Thus we find these reflex stimuli to maintain muscle tension distributed to the muscles which keep the vertebral column erect (as in standing), which hold up the head (as the neck muscles), which close the jaw, to the extensors of the limbs which support the body, and to the muscles which bend the back (opisthotonos). In short, this tonus is confined to muscles which maintain the erect posture of the animal, which counteract gravity, which prevent the animal sinking to the ground, which maintain it in the upright posture. The muscles which act in the opposite direction do not possess it. Sherrington called this postural tonus. The following he [7] gives as an illustration:

> If the head of the reflexly standing decerebrate preparation be forcibly flexed, the postural contraction of the extensor muscles of the fore limbs is inhibited, and the animal's fore quarters sink, while at the same time the postural contraction of the extensors of the hind limbs increases, raising the hind quarters. The preparation thus assumes the attitude of a cat looking under a shelf. On the contrary, if the head of the preparation is passively tilted up and back, the postural contraction of the extensor muscles of the fore limbs increases, raising the fore quarters, and at the same time the postural contraction of the extensors of the hind limbs is diminished so that the hind quarters sink. The preparation thus assumes the posture of a cat looking up to a shelf. There goes, further, with each main posture of the head, even passively imposed upon the decerebrate preparation, a corresponding reflex modification of the reflex posture of the limbs.

It is obvious that a man standing erect has an attitude different from that which gravity would give were certain muscles (antigravity muscles) not acting. Further, he is constantly placing his body in attitudes or postures which call for modifications of the erect position. To maintain the body in such altered postures with varying degrees of joint flexion there must be a readjustment of certain muscle groups, some becoming longer, some shorter. In each new position the tension of the muscle, as shown by its capacity to bear the superincumbent load, is unaltered. The tension tested by the hardness of the muscle, estimated by the degree of denting to various weights placed on its fleshy part, is practically the same in all postural lengths. In short, certain skeletal muscles can adjust themselves to different lengths, and at each different length can counteract the same weight. This tension remains unaltered over a long range of length of muscle. But the tension which the muscle can maintain in this postural attitude is less than the maximum tension which it can exert in executing movement. The two differ so far that, while the former cannot so readily be fatigued, the latter, voluntary tension, can be fatigued.

Tonus is essentially an altered state of the muscle itself. But how in the muscle such definite tension for an indefinite period apparently without fatigue or increased metabolism is brought about we can at present only surmise.

Though we do not know what the essential change in the muscle may be, we do know that this state and change of state can be produced reflexly by nerve stimuli. "Postural tonus is the expression of a neural discharge concerned with the maintenance of attitude." [8] In vertebrates the nerve reflex on which this persistent tonus depends chiefly comes from the antigravity muscles themselves, for section of the posterior roots of the nerves from these muscles immediately destroys the tonus. The stimulus from the muscle and its tendon comes through the afferent spinal nerves and the dorsal spinal root. This is easily seen in the frog in which the afferent spinal nerves of one leg are cut. If the frog be then held vertical, the limb corresponding to the sectioned nerves is held less flexed than the other, an attitude which can be shown to be due to diminished tone in the muscle of that limb. But the postural tonus can be modified by reflex stimuli from other sources—one important source is the otic labyrinth.

In nondecerebrate animals, the labyrinthine influence in muscle tension was shown in Ewald's experiment on the beak of a pigeon. After splitting the lower bill of a pigeon into equal parts and destroying the labyrinth on one side, Ewald [9] found that, though the closure of the bill was usually well executed, the maintenance of that closure was not so well performed on the side of the labyrinthine lesion, nor could that side maintain so well a pull on it of a weight. He also found that there was in the pigeon a similar weakness in the limb of the operated side to maintain a load.

5. Brondgeest: Ueber den Tonus der willkührlichen Muskeln, Arch. f. die Holland Beitr. f. Natur u. Heilkunde **2**: 329, 1860.
6. Sherrington: Schäfer's Physiology **2**: 914, and Luciani: Human Physiology, London **3**: 518, 1915.
7. Sherrington: Brain **38**: 198, 1915.
8. Sherrington: Integrative Action of the Nervous System, New York, 1906, p. 340.
9. Ewald: Physiologische Untersuchungen über das Endorgan des Nervus Octavus, Wiesbaden, 1892, p. 181.

As a result of experimental work [10] published in 1912 and 1914, it was shown that destruction of the labyrinth in dogs produced a permanent change of attitude, especially of the head. If one labyrinth be removed, there is a permanent torsion of the head to the injured side, the occiput turned down and rotated forward, and there is a leaning, particularly of the anterior part of the body, to this side. This we believed was due to overactivity of the other labyrinth (increased tension). If both labyrinths have been removed at one time, there is no such torsion of the head or inclination of the body to one side. Further, it was shown that the attitude of the head produced by unilateral destruction could be restored to normal by destruction of the other labyrinth. It was also shown that such torsion did not follow complete removal of the cerebellum, but did occur when the labyrinth was destroyed subsequent to cerebellar removal, both of which set of experiments showed that the pathway from the labyrinth to the neck muscles did not pass through the cerebellum. We further showed that, so far as the influence of the labyrinth on the tension of the eye muscles was concerned, the cerebellum played no part, for removal of the cerebellum did not alter the result. Dr. Prince later showed that the altered attitude could be restored to normal by section of the posterior roots of the cervical nerves on the opposite side. Briefly, then, the torsion of the head in the dog or cat persists after unilateral labyrinthine destruction, but can be reduced or abolished if, at a later period, (*a*) the other labyrinth be destroyed, or (*b*) the afferent nerves of the neck muscles on the opposite side be cut. If the labyrinth be removed and the dorsal cervical roots cut on the same side, the torsion following the first is accentuated by the second.

This torsion of the head is much more marked in animals than in man. In the latter, the torsion is negligible, control from the higher centers and compensation being much more effective. It is interesting here to note that it has been demonstrated that tonic impulses from a peripheral source can be reenforced. De Kleijn has shown that in rabbits, though the tonic reflexes from the neck muscles are normally very feeble compared with those from the labyrinth, yet after bilateral labyrinthine removal these tonic neck reflexes are very distinct and energetic.

Our knowledge of tonus, and not least of labyrinthine tonus, has been greatly advanced by a series of investigations carried on at the University of Utrecht by Magnus, de Kleijn and their co-workers.[11] As has been said above, in decerebrate animals the removal of motor control allows the free action of the peripheral reflex sources of tonus to be observed in decerebrate animals. Magnus and de Kleijn showed that in the decerebrate animal the extensor tonus of the limbs can be modified by different attitudes of the head in space. They showed the relative values of the reflex sources in the labyrinth and neck muscles from which these modifications come. They were able to study these two factors separately, (1) eliminating the labyrinth by destruction and (2) getting rid of the neck reflexes by encasing the animal in a plaster cast. With the labyrinth destroyed, the animal showed good extensor rigidity and tendon reflexes, and there was no alteration in this rigidity when the body as a whole underwent a change in space, though a change did occur so soon as a movement of the head on the neck occurred. With the animal encased in plaster eliminating the neck reflexes, the extensor rigidity was modified by a change in space of the animal as a whole, always excepting rotation in a horizontal plane, that is, relative to gravity. This alteration of the head in space shortened or lengthened the limbs, and the attitude so assumed was maintained (postural tonus) so long as the head was held in this particular posture. In different positions of the animal the same head movement may have different and even opposite effects according to which of these factors, labyrinth or neck reflex, is predominant.

In the head segment there are two important sources of this tonic reflex action, the labyrinth and the neck muscles. These have to be taken into account in all postural reflex movements of the body when the head is displaced. The labyrinth reacts to gravitational force and is concerned with the adjustment of the head, of the eyes and of the jaw to the vertical. With the adjustment of the head segment must necessarily come an adjustment of the vertebral column and limbs. The neck muscle reflexes have to do with the movements of the head relative to the body.

To the otologist there is one group of muscles in which compensatory movements (kinetic) following altered position of the head in space and the persistent tension (static) which remains unaltered as long as the head remains in this position (postural tonus) are of great interest, namely, in the extrinsic muscles of the eyes. To understand the purpose of this "special example of corrective reflexes" it is necessary to consider the physiologic basis of single vision with two eyes. This depends on the object's falling on identical or corresponding points of the retina. If one retina be placed in front of the other with the fovea in contact and the temporal half of the one retina covering the nasal half of the other, any point of one will cover a corresponding point of the other.[12] In the head, the eyeballs, though freely movable, naturally tend to assume a position—primary position of the eyes—in which, in man, the lines of sight are parallel and the plane of sight horizontal. This attitude is seen in deep narcosis, and also after death before rigor mortis. In this primary position of the eyes, the tension in the various eye muscles is in equilibrium, and this balance is brought about as is balance elsewhere by the coordination of reflexes from the retina, from the labyrinth, and the kinesthetic impulses from muscles of the eye and neck.[13]

The functional activity of the eye depends on its constant relation to the horizontal. No matter how the head shifts, this adjustment to the horizontal must be insured and must be retained as long as the attitude of the head is in this posture. The existence of this adjustment and the maintenance of gaze [8] within wide limits is an every day experience and is a necessity to normal existence. When we alter and assume any head position, the eyes automatically modify the position of the visual field.

As has been shown, the attitude of the head through tonic reflexes from the labyrinth and from the neck muscles acts to establish and maintain the attitude of the animal to the vertical. In the maintenance of the

10. Wilson and Pike: The Effects of Stimulation and Extirpation of the Labyrinth of the Ear and Their Relation to the Motor System, Phil. Tr. Roy. Soc. London **803**: 127-160, 1912; The Relation of the Labyrinth to the Cerebellum and the Cerebrum, Tr. Am. Otol. Soc., 1914.

11. Magnus, de Kleijn and others: Arch. f. d. ges. Physiol. (Pflüger's), 1912, 1913, 1917, 1920, 1921.

12. Schäfer: Physiology, Edinburgh **2**: 1124, 1900.

13. Compare: Sherrington, Integrative Action of the Nervous System, p. 342.

attitude of the eyes to the vertical or horizontal, the labyrinth and the neck musculature act decisively on the freely movable eyeballs.

Van der Hoeve and de Kleijn studied the tonic labyrinth reflexes in the eyes of rabbits, and found that each position of the head in space gives a particular "roll" of the eyes, rotatory or vertical or a combination of these, that each position of the head in space necessitates a definite position of the eyes, and that this modified position persists as long as the head is kept in the modified position. One labyrinth influences the eyeball rotations of both eyes, but chiefly the muscles of the opposite side. After the labyrinths on both sides have been extirpated, all such tonic reflexes on the eyes from modification of the head in space cease. No law of sidewise movement of the eyes in the various positions of space could be shown. In a later paper, de Kleijn published his results in regard to tonic neck reflexes (after removal of the labyrinths). He found that to each position of the head in relation to the trunk corresponds a definite position of the eyes in the orbit. These neck reflexes are weaker than the labyrinth reflexes. But he believes that, in the rabbit, tonic action moving the eyes in the horizontal plane are chiefly influenced from the neck reflexes.

It appears, therefore, that the eyes in a particular movement of the head tend to preserve their relation to the horizontal, that is, the relation of the retina to the horizontal. Thus, in movement of the head upward the eyes roll down and within limits the fixation will persist, the fixation being determined by the desire or ability to focus on a particular object. Here the labyrinths act in keeping with the general action of proprioceptors to adjust and maintain the posture of the eyes in varying movements of the body. But if the head be turned farther so that the fixed object gradually fades away from sight, two things occur: diminution of retinal stimulation and increased tension of the eye muscles; then the eye returns to its primary position with a quick movement. In this paper we are not concerned with the question of nystagmus, which would necessitate a more detailed consideration of the results of the labyrinthine reflexes of movement (kinetic or dynamic) seen for example in rotation. We are here concerned with the tonus (persistent or static) effect, which appears to me the primary and elementary factor, in labyrinthine activity.

When one labyrinth is destroyed, this ability to posture efficiently the eye muscle is affected for a time, the duration varying with the position of the animal in the vertebrate phylum. Equilibrium is disturbed and a deviation occurs which is the primary factor in nystagmus (slow movement of nystagmus). But the normal association of binocular movement is maintained. This deviation is caused by tonic reflexes from the intact labyrinth, and remains until compensation occurs. It therefore takes some time for the eyes to regain and retain the normal posture—a posture which has lost one of the factors essential to its maintenance. Even after the nystagmus has disappeared and the deviation has been corrected, I have seen the recurrence of the deviation and of the nystagmus by placing the animal in a position unusual to it, e. g., on its back. Later, however, this also is corrected.

THE MEASUREMENT OF TONUS

Attempts to estimate the degree of tonus present in a muscle have proved exceedingly unsatisfactory. The steadiness and persistence of the contraction present in normal tonus in the various degrees of contraction of a muscle render its estimation difficult. I know of no method by which an accurate estimate can be made. If tonus means the postural fixation which a muscle assumes in various attitudes of the animal, it is open to doubt whether we can measure tonus. Attempts have been made to measure the degree of muscle tonus in different lengths of a muscle by the degree of weight impression (Eindruckbarkeit) on the muscle. It has been found that this weight impression was nearly equal for varying lengths in varying postures.[14]

As the tonus, however, is so markedly due to and affected by nerve influences acting reflexly from various sources, one may measure variations of tonus effects relative to a normal. Thus, a hypertonus may occur from removal of motor control which allows tonus impulses to play unimpeded on the muscles. This occurs experimentally in the decerebrate rigidity of animals, and in man it is seen when there is a lesion sufficiently gross to interfere with cortical control (spasticity). A hypotonus may occur from removal of a source of tonus stimulation, e. g., the destruction of the labyrinth. In man, loss of tonus from labyrinthine destruction rapidly passes—the falling, the staggering, the nystagmus, etc. These effects, as one would expect, are more marked in the head segment. On the trunk and limb I would regard this tonus loss as a mass effect, secondary to the head. The knee jerk is related to the tone of the skeletal muscles, and an indispensible condition for the appearance of a knee jerk is tonus in the muscle. Yet I am not aware that there is any evidence of alteration of knee jerk after loss of a labyrinth. In hypotonus there is recognized an abnormal extensibility of muscles and joints, which abnormal relaxation is due undoubtedly to diminished tension in muscles and can be compared to increased movements of joints after death. The measurement of the hypotonus may be made by the excursional capacity of movements of the joints; thus, fingers may be bent back to an abnormal degree though individual movement is good. But such increased movements of joints has not been seen in labyrinthine affections, probably because the joints are primarily influenced by the proprioceptors regulating the segment to which they belong, whereas the labyrinth is primarily concerned with the head segment. The impossibility of estimating variation of labyrinthine tonus by the pressure exerted on a dynamometer will be obvious from what has been said. In regard to this it is well to recall that the maximum tension in executing a movement is greater than the tension required for posture.

RELATION OF POSTURAL TONUS TO THE NERVOUS SYSTEM

Tonus has been demonstrated to be distinctly under nerve influences, the chief of which arise in the muscles themselves. Lesions of the posterior roots containing the afferent nerves arising in the muscles of an extremity greatly lower or abolish the tonus of that limb. In decerebrate rigidity, section of the posterior roots of a limb abolishes the rigidity in the limb muscles. In neither case does destruction of the labyrinth abolish the rigidity of the limbs, though it can be shown to lower the tonus.

The noncontrolled tonic effect seen in decerebrate animals is destroyed not only by section of posterior roots but also by section of the spinal cord, and by section through the medulla. So the impulses coming in

14. Sherrington: Postural Activity of Muscle and Nerve, Brain 38: 201, 1915.

from the posterior roots do not immediately cross to the spinal motor nuclei but pass up the cord in the ventrolateral columns to a center in the midbrain and pons. The reflexes from all muscle sources come together in the pons and mesencephalon, since Sherrington showed in decerebrate animals that removal of the cerebellum has seldom any effect in postural tonus. Tonic impulses from the labyrinth also pass into this area, for it was shown by Dr. Pike and myself that the pathway from the labyrinth to the neck muscles and to the eye muscles does not pass through the cerebellum, and that section of the brain anterior to the eye nuclei in pons and mesencephalon does not interfere with eye deviation following labyrinthine stimulation or unilateral destruction. De Kleijn and Magnus [15] identified three centers in the brain stem concerned, respectively, with head and trunk movements, compensatory eye movements and positional reflexes. It will be interesting to know the relation of these to the nucleus motorius tegmenti, the primitive coordinating centers extending throughout the brain stem and including the red nucleus and Deiters' nucleus.[16]

We may, therefore, say that there is a tonic center in the mesencephalon, pons and medulla activated by impulses from the tonic centers in the muscles and in the labyrinth. This tonic center in the midbrain is activated as far as limbs are concerned primarily from the proprioceptors in the limbs and secondarily from the labyrinth, and so far as the head is concerned from the muscles of the cervical region and from the sensory endings in the labyrinth. In the case of the eyes, to the latter have to be added the eye muscles and retina. In the head region the labyrinth plays a more important rôle than in the limb segments. To this tonic center probably come the tonus impulses from all tonus receptors. From it there issue forth corrective effector responses. The work of this center may be automatic, but higher cortical centers can recognize its results and control its activities. The cerebellum also probably plays a part in adjusting and coordinating.

RÔLE OF THE SYMPATHETIC

It has been repeatedly asserted that the sympathetic nervous system plays an important rôle in tonus.[17] As was shown above, while duality in muscle function rests on a satisfactory basis, duality of nerve supply, somatic and sympathetic, does not appear to me to be established. That in some measure the tonus of skeletal muscles is served by the sympathetic appears to have some experimental evidence; but there is no evidence that the sympathetic nervous system influences the postural tonus of skeletal muscles in any marked degree. It is obvious from what has been said that in postural tonus the main conduction paths of the reflex arc lie outside the sympathetic system. If any connections lie within the sphere of the sympathetic, it is presumably near the muscular connections. The evidence in favor of sympathetic relationship may be summed up thus:

1. Anatomically, the presence of sympathetic fibers in voluntary muscle, as shown by a nerve fiber splitting, part going to a capillary and part to a muscle plate. It has been claimed that these fibers do not degenerate after section of the motor nerve to the muscle. The presence of the former I demonstrated some years ago in the heart muscle,[18] but there the evidence appeared to me to favor a nonsympathetic origin. Further, it may well be that fibers arising in the spinal cord pass by sympathetic paths to the muscle.

2. Disappearance of tonus in the hind limb of the frog or the cat if the rami communicantes are cut. This has not been confirmed; further, the production of tonus by stimulation of the sympathetic has not been seen by several investigators.[19]

3. Action of epinephrin on the nerve endings of the automatic sympathetic. It has been shown that an injection of epinephrin can produce prolonged contraction without fatigue. But, as pointed out by Bayliss,[20] this may well be due to increased blood supply.

With such knowledge of tonus as we possess, one cannot dogmatically say that such a relationship does not exist, but one can say that it is not proven.

In man and the higher mammals, though the labyrinths add a quota to tonus activity, yet they are not essential to its presence. The higher the mammal, the less conspicuous the loss of labyrinthine tonus and the more rapid and perfect the recovery. Whether this is due to the increased compensatory activity, a factor so obvious and generally acknowledged in the development of the higher mammals, or to a retrogression of the vestibular organ, has given rise to some discussion. There appears to me but little doubt that a compensation mechanism is the factor to which the change is due, "the greater degree of adaptability on the part of the highly complex somatic motor system" of man.[21]

What are the agencies which set the nerve impulses in action?

It is obvious that the stimuli must come from the organism itself, since the receptors are shut off from forces external to the body (proprioceptors). Consideration of the data given above point to mass movement, weight, inertia, torsion, etc., as being the deciding factors in labyrinthine stimulation, and that mass movements under the influence of gravity are the deciding influences in labyrinthine tonus. Anatomically, the maculae of the utricle and saccule with their relation to the otoliths are well adapted to mass reaction, and the ampullae, with their relation to the semicircular canals and utricle, are well adapted to react to variations of fluid pressure. Physiologically, the experiments of Magnus and de Kleijn show clearly the influence of gravitational forces in the tonus of the trunk and limbs of decerebrate animals. Recently, Maxwell [22] has amplified the work of previous investigators and has shown that pressure applied to the otolith or movement of it in different directions gives in fish compensatory eye movements, and that torsion produced by rotation is the cause of action of the ampullae. In a recent publication, de Kleijn states that he produced by rotation in mice displacement of the otoliths without damage to the semicircular canals, and showed that such displacement was followed by loss of postural tonus. In regard to the anatomic source of tonus in the labyrinth, maculae [23] or maculae and ampullae (Maxwell), there appears at present to be disagreement.

15. De Kleijn and Magnus: Independence of the Labyrinthine Reflex on the Cerebellum and on the Position of Centers for Labyrinthine Reflexes in the Brain Stem, Arch. f. d. ges. Physiol. (Pflüger's) **178:** 163, 1920.
16. Herrick: Introduction to Neurology, 1915, p. 181.
17. De Boer: Die Bedeutung der tonischen Innervation für die Funktion der quergestreiften Muskeln, Ztschr. f. Biol., 1914-1915, pp. 239-354.
18. Wilson, J. G.: The Nerves of the Atrioventricular Bundle, Proc. Roy. Soc. London **81:** 160, 1909.
19. Cobb, Stanley: Am. J. Physiol. **46:** 479, 1918.
20. Bayliss: Principles of General Physiology, p. 546.
21. Wilson and Pike: The Effects of Stimulation and Extirpation of the Labyrinth of the Ear and Their Relation to the Motor System, Phil. Tr. Roy. Soc. London **203:** 157, 1912.
22. Maxwell, S. S.: J. Gen. Physiol., 1919-1920, pp. 123, 349.
23. De Kleijn and Magnus: Ueber die Funktion der Otolithen, Arch. f. die ges. Physiol. **186:** 1-97, 1921.

CONCLUSIONS

1. Tonus is a plastic state of the muscle associated with the maintenance of normal attitude.
2. This state is under the control of reflex nerve impulses, which automatically produce a modification of the muscle to maintain a particular attitude.
3. One source from which these reflex nerve impulses arise is the labyrinth.
4. These reflex nerve impulses, determining the amount of muscle lengthening and shortening, together with the degree of fixation, depend on antigravity impulses arising in the labyrinth.
5. The labyrinth is chiefly concerned with the maintenance of the attitude of the head in space. As a corollary, the labyrinth influences secondarily the muscles of the trunk and limbs.
6. The muscle proprioceptors are concerned with segmental posture. The labyrinth is concerned with total posture. So far as trunk and limbs are concerned, the labyrinth may be regarded as a mechanism superimposed on the segmental.
7. In unilateral destruction of the labyrinth, the deviation of the eyes and neck is due to tonic activity of the other labyrinth.
8. The stimulation of the nerves in the labyrinth is due to mass movements of the otoliths and fluids in the canals.

104 South Michigan Avenue.

HEART DISEASE IN INDUSTRY

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The real object of the Workmen's Compensation Act is to minimize incapacity arising out of and in the course of employment: to obtain the earliest possible return to work of the injured employee with the greatest possible working capacity or health. This is economic. From a medical point of view, there are other evident benefits resulting from the application of this act. Industrial medicine today embraces, in some of its questions, at least, practically all diseases. The relation of industry to heart disease will serve as a fair example.

Reviewing the records of 650 cases examined for the Massachusetts Industrial Accident Board as the impartial physician appointed under the act, I found that in 231 of them either there was an organic heart lesion or else there were symptoms directly referable to some functional disturbance, such as a marked arrhythmia with premature contractions.

There are several ways in which an occupation may injure the heart: Trauma and muscular strain may damage the tonicity or contractility, or produce an acute dilatation, when there is preexisting disease; metallic or bacterial poisons may cause or aggravate lesions of the muscle, valves or innervation; emotional stress may upset the normal rhythm. I purposely omit such unusual occurrences as ruptured valves, as they have not occurred in my series. Many of the conditions that are listed were neither caused nor unduly increased by work, while others were unaccompanied by symptoms. Both of these classes I have included because of the medical value of their statistics. Of course, in many instances, two or more lesions were present in the same patient. For the sake of simplicity, I have, as far as possible, listed such a case under a diagnosis of the most important lesion, and in no instance have I used a record a second time under another diagnosis. All cases of doubtful diagnosis were discarded.

The total number of cases examined [1] was 650. The total number showing abnormal heart conditions was 231. These 231 cases may be subdivided as in the accompanying table.

ABNORMAL HEART CONDITIONS IN TWO HUNDRED AND THIRTY-ONE CASES

Condition	Number of Cases
Mitral regurgitation	94
Mitral stenosis	36
Aortic regurgitation	6
Aortic stenosis	2
Aortic and mitral regurgitation	5
Tricuspid regurgitation	1
Acute myocarditis	1
Paroxysmal tachycardia	3
Auricular fibrillation	28
Pulse alternation	2
Myocardial degeneration	8
Arrhythmia and premature contractions	39
Pericarditis (plastic)	2
Heart block	1
Coronary sclerosis	3

I have one case listed as acute myocarditis, and use the term because of the clinical picture of the rapidly progressive failure of a heart muscle during a general sepsis. I have included under the term auricular fibrillation only those cases showing clinically absolute irregularity, although in some this was discovered only by a comparison of the pressures of the individual beats as shown by a sphygmomanometer. By myocardial degeneration I have reference to cases in which there was no active process going on in the myocardium and there was not the irregularity or incoordination of a fibrillation, but there were signs (rapid pulse, low blood pressure, rapid exhaustion, etc.) of what Mackenzie would call "heart failure" (that is, impaired tonicity of the heart muscle).

A type of case which I have largely omitted from my list, but which merits much consideration from an industrial point of view, is that of a workman who, because of his age or other ailments, needs but slight added cause to produce permanent incapacity, or who, being incapacitated because of some temporary condition from which he recovers, finds he cannot resume his usual duties because he has apparently fallen out of the routine or "habit of work."

Further subdivision of my figures shows that of the ninety-four cases of mitral regurgitation, sixty-eight were without symptoms; twelve showed slight symptoms, and evidently with a short rest would regain full working capacity; fourteen showed moderately severe to extreme symptoms. Sixty-five of these ninety-four cases were neither caused nor unduly aggravated by the occupation of the patients. Of the remaining twenty-nine patients, seven suffered some degree of decompensation from physical exertion. There had been a preceding history of rheumatism (perhaps aggravated by trauma or exposure) in four; in two there was a definite history of sepsis from accidents, with endocarditis resulting. In one the

1. Incidentally, the type of case referred for an impartial examination is one in which there is some doubt concerning the causal connection, diagnosis, etc.

employee had contracted anthrax, from which he recovered with an incompetent mitral valve. One had suffered from brass fitters' ague; thirteen had lead poisoning; one patient attributed his symptoms to an attack of "bends," caused by too rapid decompression during caisson work.

An average made of the ages of these patients with mitral regurgitation gave no results of value in regard either to incidence of symptoms or to causation. It is, perhaps, of interest to note that eight of the cases showing slight if any symptoms occurred in men of 60 years or over.

Mitral stenosis, totaling thirty-six cases, showed no symptoms in nine cases, slight symptoms in five, and moderate to marked symptoms in twenty-two cases. Work had had no appreciable effect on the course of the disease in twenty of the cases (remembering, of course, the progressive character of this lesion because of its scar tissue). In fourteen, trauma or exertion had induced symptoms; in one case the onset of symptoms was closely connected with sepsis. In one typical case of a second degree mitral stenosis, in which symptoms had begun soon after a severe fall, the diagnosis of "ruptured mitral valve" was made at one of our hospital clinics, in spite of the fact that the employee had been able to pick himself up and continue his work for several hours.

Three of the five cases of aortic regurgitation showed cardiac symptoms. Three of the cases were undoubtedly aggravated by work.

One case of aortic stenosis was noted merely during a routine physical examination of a man suffering from a severe back-strain. The other patient described sensations of vertigo, dyspnea, pounding in his head, and ringing in his ears only when exposed to fumes set free during the manufacture of trinitrotoluene. In connection with the latter, I may mention a case of aortic and mitral regurgitation with almost identical symptoms occurring under the same working conditions. There are four other cases of aortic and mitral regurgitation in my list, two showing symptoms and two without. Three of the cases were evidently not causally related to the work of the patients. One attributed his symptoms to an attack of "bends" or compressed air sickness, as did one patient, already noted, with mitral regurgitation. (It is commonly believed that the pathology of caisson sickness lies chiefly in the absorption—and later freeing—of gases, especially nitrogen, in the blood. That the symptoms may be due to changes in blood pressure has been suggested by several observers. Thanks to the courtesy and also the help of Dr. W. J. Brickley, I recorded blood pressure findings under different atmospheric pressures in the lock of the South Boston tunnel several years ago. I was much surprised to note that the blood pressure fell as the atmospheric pressure rose, and vice versa.)

Tricuspid regurgitation is probably not uncommon to a slight degree, but the recognition of a pathologically incompetent valve is at times difficult. The one case I have included in this list showed a typically located murmur and also the venous pulse synchronous with the ventricle, as well as the marked symptoms of decompensation. It was in a man, aged 30, and the acute symptoms had undoubtedly been occasioned by severe strain.

My one case of acute myocarditis was apparently a direct result of an infected wound.

Each of the three cases of paroxysmal tachycardia gave typical symptoms. One was undoubtedly due to fright; one manifested itself after a severe fall; the third was claimed to be the result of overwork, but was accompanied by a marked digestive disturbance, overindulgence in tobacco, etc. All these patients had had two or more attacks, but denied any prior to the alleged exciting cause.

There were twenty-eight cases of auricular fibrillation. Four of the patients described no cardiac symptoms whatever; eight had indefinite or slight symptoms, and sixteen had marked symptoms. Concerning their relation to industry, twelve described either initial symptoms or else an exacerbation of preexisting symptoms following trauma or strain. In eleven there was nothing in the history to suggest causal relationship. Five showed definite plumbism.

Both cases of pulse alternation showed symptoms. In one case the heart undoubtedly had been overtaxed by muscular exertion; in the other, occupation played no part.

Obviously, all the eight cases of myocardial degeneration showed symptoms. Myocardial degeneration meaning the heart whose toxicity is below par but in which there is no valve lesion or fibrillation, it is evident that such a condition would hardly be noted unless there were symptoms at the time of examination. This suggests the importance of exercise in determining the functional ability of the heart. In six of these cases I saw no relation to the occupation of the patient; in one instance, decompensation had followed muscular strain; one patient had lead poisoning. Probably there were many cases of myocardial degeneration which I overlooked.

Simple arrthymias are, of course, most common. In mentioning them here, I refer only to those causing symptoms and usually having rather numerous premature contractions. There is one case in my list, however, in which the condition was extreme, suggesting a fibrillation, but in which the patient had no symptoms whatever; he was 70 years of age. The latter, and twelve others, bore no relation to their occupation. The probable causative factor in the rest were, briefly: fright, nine cases; trauma, three; infection, one, and lead, six cases; and other chemicals, as arsenic, wood alcohol and illuminating gas, six. In all these cases, the symptoms were either unaffected or decreased by exercise.

Both the cases of plastic pericarditis showed moderate symptoms. One was not causally related to the occupation; the other followed directly a traumatic pleuritis.

In the case of heart block with a mild Stokes-Adams syndrome, there was a positive Wassermann reaction. The patient attributed his symptoms, however, to fright following a minor injury.

The three cases of coronary sclerosis were obviously diagnosed from their symptoms. One case could hardly be related to occupation or to any incident therein. In the other two, the initial attack was occasioned by severe strain while at work. The possible importance of this is recognized when we consider that an attack of angina pectoris affords a hyperalgesic area of tissue over the heart, and may predispose to subsequent attacks.

Summing up some of the more common injurious agents, we find that trauma is the chief factor in industry to affect the heart, occurring as it does in

forty-seven of the 231 cases. Lead, occurring in twenty-five cases of different types, and other metallic poisons in nine cases (arsenic had previously been noted by Graham Steele) suggest their probable etiology and also more energetic methods of prophylaxis. Fright, occurring in ten cases, is undoubtedly an etiologic factor in producing the arrhythmias. Caisson work may easily be a cardiac menace, and the customary examination of each workman before entrance into the lock should not be restricted to ear-drums and the upper respiratory passages, but should include a careful examination of the heart.

Much time and thought are devoted to the treatment of surgical injuries. Insurance companies have extensive orthopedic and surgical clinics, with the most modern devices for treatment. What is done for the usual heart case? Small doses of digitalis, infrequent and often incomplete examinations, and general advice about "taking it easy for a while."

In my experience, comparatively little attention is devoted to determining the functional capacity of a heart, which is the real indication of the degree of incapacity. All these examinations should, as far as possible, include a determination of the effect of exercise on the heart.

In view of the fact that most of the employees examined were supposedly incapacitated for some physical reason, it is surprising to note the large number of cases showing no cardiac symptoms. This is particularly true in regard to mitral regurgitation, in which sixty-eight of the ninety-four patients, or 72 per cent., complained of nothing referable to the heart, while twelve more had but slight symptoms.

The suggestion has several times been made of recent years that, prior to being engaged, all workmen should be subjected to a physical examination with the idea of rejecting those presumably unfit. Aside from the probable storm of protest from labor unions, etc., I feel that this might be unwise from a medical point of view. Considering the fact that the type of case which I have described is that of a laborer, it would seem that such a physical examination might exclude many who were really capable of performing their duties.

The value of graded regular exercise in the treatment of heart disease has been well demonstrated, particularly by such men as Oertels and Schott. Why cannot graded regular work be used with certain restrictions to the same effect?

In addition to the economic benefit accruing from the application of the workmen's compensation laws, it is evident that great medical benefits may be obtained. Not only does the application of this act offer an admirable means of answering many questions relative to causation, treatment and prophylaxis of disease, but also it demands that we strive to answer these questions.

31 Massachusetts Avenue.

Requisitioning Unused Land for Playgrounds.—Land which is not in use and which is not expected to be used in the immediate future may now be requisitioned in Austria by national, provincial or municipal authorities for use as public playgrounds, according to provisions of a law enacted by the Austrian National Assembly, July 22. The owner of the land will receive suitable compensation for its use, and the question whether requisition is permissible will be decided by the provincial government, which will also fix the amount of compensation when agreement is not reached on that point.

METHOD OF DEALING WITH INTESTINAL LOOPS DENSELY ADHERENT TO AN UMBILICAL HERNIA*

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Some umbilical hernias are easily handled; others occasion the operator much concern. As I have indicated elsewhere,[1] after we have made the transverse or longitudinal elliptic incision through the skin and fat, and have dissected the sac free from the fascia until the outer layers of the hernial ring are exposed

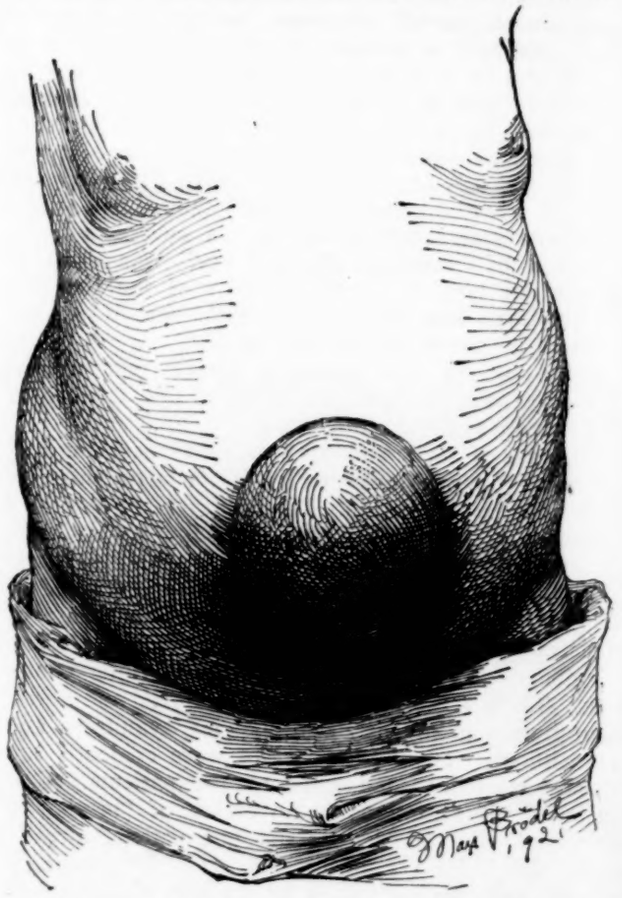

Fig. 1.—Hernia of the umbilical region as it appeared at the second operation. The walls of the hernial sac were very thin, although the patient was exceptionally stout. The hernial ring was about 4 cm. (1⅝ inches) in diameter.

on all sides, we make a small longitudinal incision through the fascia and peritoneum just above the ring.

A finger is then introduced, and under its guidance the hernial ring is cut loose all the way around. When this has been done the operator is able to lift the hernial sac well away from the abdominal wall, and then wall it off.

When the sac contains only omentum and this is densely adherent, the incarcerated portion of it is tied off and removed with the sac. Sometimes the omentum is free and can be readily pushed back into the abdomen. The ring is then closed by the overlapping method.

* From the Gynecological Department of the Johns Hopkins Hospital and of the Johns Hopkins University.

1. Cullen, T. S.: The Umbilicus and Its Diseases, Philadelphia, the W. B. Saunders Company, 1916, p. 472.

If intestinal loops are contained in the sac, it is usually an easy matter to open up the main sac and its alcoves, starting at the neck and traveling outward. Occasionally the loops have to be literally dissected away from the sac wall, leaving many bleeding points on the bowel.

In the case here reported, the intestinal adhesions were so dense, and so many loops had grown fast, that the usual procedure could not be followed. The patient was 78 years old, had had a partial obstruction for several days, and could not stand a long operation; consequently, we had to work with the utmost speed and were forced to adopt a most unusual procedure.

REPORT OF CASE

History.—I first saw the patient, Dr. D. W. C., aged 66, in December, 1906. He told me that he had had an umbilical hernia for eighteen years. It had, however, given him little trouble or discomfort until recently. The hernia was 16 cm. (6 inches) across, somewhat lobulated, and the adipose tissue around it was indurated. As the patient was very stout and not a particularly good risk, I advised against operation, especially as the rupture had occasioned him little annoyance.

I saw him again in June, 1908. He was somewhat worried, being sure that on one occasion during the preceding six months a loop of bowel had gotten into the sac. Dr. William S. Halsted also saw him and advised operation.

Operation and Result.—At the Church Home and Infirmary, June 17, 1908, I made a transverse, elliptic incision, dissected out the sac at the neck, nicked the fascia just above the ring, and, guided by my finger, cut the ring away from the abdominal wall. The sac was lobulated. It contained nothing but omentum. This was dissected free and returned to the peritoneal cavity. The upper flap of fascia was drawn down

Fig. 2.—An umbilical hernia in which the intestinal loops are densely adherent to the sac. The hernial sac was cut away from the abdominal wall; the hernial mass was then drawn well out of the abdomen and walled off. As it was impossible to separate the intestinal loops from the sac, the skin was dissected away from the sac. A thin fascia and the peritoneum now formed the sac wall. At this stage the sac wall was ignored and the loops of intestine were cut away from one another until all the small bowel had been unraveled. Transmitted light greatly aided us in separating the many loops. The appearance after the loops had been separated is shown in Figure 3.

over the lower one and snugly approximated with two rows of mattress sutures of a kangaroo tendon.

The patient made an excellent recovery and left the hospital at the end of three weeks. He was back at practice in less than five weeks.

When seen, May 27, 1918, the patient had been in excellent health since the last operation. For some time, however, the umbilical region had beeen very prominent, and a definite umbilical hernia was again present. On one occasion he apparently had a definite intestinal obstruction for twenty-four

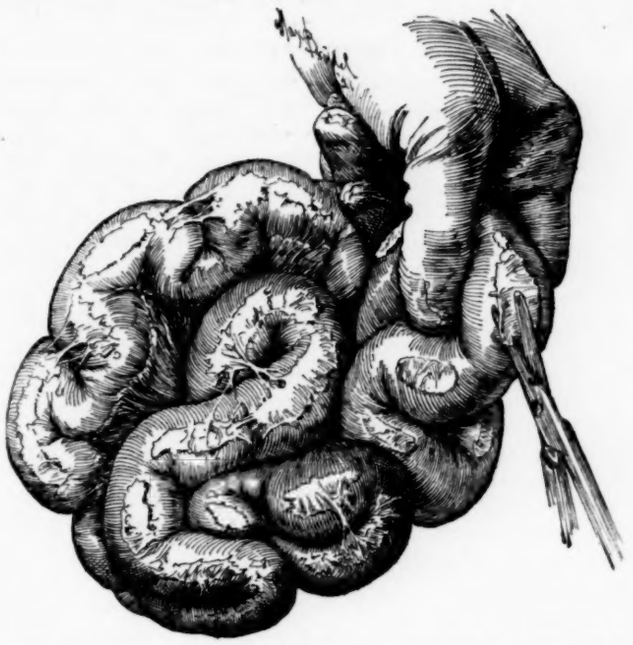

Fig. 3.—Portions of the sac of an umbilical hernia left attached to the small bowel. Irregular patches of the hernial sac, consisting of peritoneum and fascia, are firmly fixed to many loops of small bowel. With a pair of scissors the patches are being trimmed off so that only the densely adherent portions of the sac remain. All such areas were so treated; none of them bled. The bowel was now returned to the abdomen and the hernial ring was closed. It is more than three years and a half since the operation. The patient has had no further abdominal symptoms. He is 82 years of age and feels perfectly well.

hours. Dr. George L. Wilkins, his colleague and friend, found a protrusion of the abdominal wall at the site of the old hernia. This protrusion had reached rather large proportions (Fig. 1).

May 26, the patient had intestinal obstruction. On the next day he came into the hospital. He looked perfectly well, had no fecal vomiting, and as a result of enemas some gas had been expelled. As he was now 78 years old and undoubtedly had many loops of bowel adherent to the hernial sac, I temporized. Finally, on the evening of May 29, he turned and said: "Cullen, if you don't operate, I am going to die."

Second Operation.—Fortunately, as the operating room was ready for another patient, no delay occurred. He was operated on within a few minutes. Under procain I encircled the sac, dissected it free down to the ring and then, with the finger in the abdomen as a guide, cut the ring loose from the abdominal wall all the way around.

The sac was then well drawn out. It contained many loops of bowel. The neck was opened for a considerable distance and laid out flat. This gave further exposure and showed that loop after loop of the bowel was densely adherent to the sac—so adherent that liberation was out of the question. I then dissected the skin away from the hernial sac, after which there was left a hernial covering consisting of peritoneum firmly fixed to a greatly attenuated layer of fascia (Fig. 2). The combined thickness of the two was not over 0.5 to 1 mm.

No further attention was paid to the sac as such. Loop after loop was separated from the adjoining one until the small bowel was completely unraveled. We now had at least from thirty to forty patches of sac adherent to intestinal loops (Fig. 3). The loose edges of these patches were now carefully trimmed off with scissors, in precisely the same manner that a patch on the inner tube of a bicycle tire is trimmed. When this was completed, we had patches of all shapes and sizes on the small bowel. The outer surfaces of the patches were smooth, whitish, and did not bleed at all.

The bowel was now pushed back into the abdomen, the omentum drawn over it, and the patient given gas for a few

moments until the ring, which measured 4 cm. (1 9/16 inches) in diameter, was closed by the usual overlapping method.

Recovery took place without incident.

Present Condition.—Dec. 1, 1921, the patient had just passed his eighty-second birthday; he was in excellent condition, was in active office practice, and was doing a good deal of writing; incidentally, he is the author of that well-known volume, "The Physician Himself."

COMMENT

Had we attempted to free the many loops of bowel by dissection, innumerable raw areas would have resulted, necessitating numerous black silk sutures. Their insertion would have taken much time, and the bowel would have been unduly narrowed at many points owing to the extent of the raw surfaces, with the strong probability of early intestional obstruction. With a relatively smooth surface, such as these patches of the sac wall showed, and with no bleeding, we should hardly expect subsequent adhesions of any moment, infinitely less in any event than would occur where many raw areas would of necessity be left on the bowel had the sac been dissected loose. Furthermore, the patches would splint the bowel and tend to keep it open. On the other hand, where raw areas are present, kinks tend to develop.

Given such another case in future, we should by preference at once adopt the procedure just described.

20 East Eager Street.

CONGENITAL SYPHILIS IN INSTITUTIONAL CHILDREN

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"How can I assure myself that this child, whom I desire to adopt, does not have syphilis?" is the question asked of the orphanage physician. The child may be robust and apparently as nearly normal as any child in the institution, yet may the physician base an opinion on this alone? It is my aim in this paper to emphasize how essential a knowledge of the parental venereal history is to the examining physician.

It was my privilege to be associated in a minor capacity with Drs. Heyman and Raynor in making their survey of the families from which syphilitic patients came to Ward's Island. We were amazed at the large number of unsuspected cases of syphilis found among the apparently normal members of the families. Among the 254 immediate relatives of seventy-five patients, syphilis was established in fifty cases, or 19.6 per cent. Of this group, eighty-two individuals were thoroughly examined by the hospital physicians, and twenty-four, or 29.2 per cent., were found to be infected. It was difficult to find all of the relatives, because many of the families were broken up through the inability of the infected father to provide for them. This observation suggested that the children from these families, when there are any living, might be found in the orphanages. On investigation, it was found that in 1919 not all institutions of the state were making blood examinations for syphilis on admission, and therefore a proposal submitted by the Division of Venereal Diseases to assist them in making blood tests was accepted by a large number of orphanages.

In assisting the institutions to make blood tests, the usual technic employed in general practice was observed. Two specially trained physicians and nurses were assigned to take the specimens. The outfits supplied by the New York State Department of Health Laboratory were used in collecting the blood specimens, and the examinations were made at the state department laboratory at Albany or its branch in New York City. Only one specimen was taken from each child except when the laboratory was not satisfied with its examination or, owing to some accident, the specimen was lost. Two antigens, the crude alcoholic and the cholesterinized, were used in all examinations. A total of 11,205 persons ranging in age from 2 years to 21 years, with an average of 10 years, was examined, with the findings given in Table 1.

TABLE 1.—REPORTS RECEIVED FROM THE WASSERMANN TEST OF A SINGLE SPECIMEN OF BLOOD FROM EACH OF 11,205 INDIVIDUALS

Antigen		Number	Per Cent.
A* —	C* —	7,628	68.0
A —	C ±	1,753	
A —	C +	787	
A ±	C —	5	
A ±	C ±	382	28.5
A ±	C +	250	
A +	C —	2	
A +	C ±	6	
A +	C +	140	2.3
A 4+	C 4+	122	
Unsatisfactory		130	1.2
Total		11,205†	100.0

* A, alcoholic antigen; C, cholesterinized antigen.
† Of the 11,205 children, 271 were black and sixteen, or 6 per cent., of these had a positive reaction of the blood.

It will be seen that 68 per cent. of the specimens gave a negative reaction when tested with both antigens, and that 122 specimens, or 1.1 per cent. of all, gave a four plus reaction to both antigens. This small number of positives was a great surprise, for even if the one plus specimens were added to the four plus, there would be only 2.3 per cent. of positives among this large number of orphans. Inquiry at the institutions disclosed the fact that not all of the inmates are orphans, but that some are children placed there by parents whose home is perhaps temporarily abandoned. But this explanation was not considered sufficient to account for the few positives, and the physicians were requested to make notes on the physical condition of the children.

The findings were equally surprising to the institution authorities, for some children who were found positive by blood examination had always appeared perfectly well and healthy, while some others who had histories of symptoms more or less suggestive of congenital syphilis gave negative reactions. No history of acquired syphilis could be discovered in any of the children.

More than 700 white children were given such physical examination as could be made without removing any clothing. This was not at all satisfactory, as will be appreciated by glancing over Table 2; but a more thorough examination would have required more preparation of the child, which it was feared might permit of an exaggerated opinion of the individual need of the examination and thus eventually interfere with the extension of the work. Since this was pioneer work and conducted largely as an educational measure, it was thought wise to occasion as little inconvenience to the institution authorities and the children as possible, with the hope of thus securing more hearty cooperation. The examination consisted of a careful inspection of the exposed skin surfaces, teeth and

tonsils, palpation of glands and bones, and inquiry as to hearing, eyesight and nervousness. Observation was also made as to whether or not the child was underweight.

The first observation from the table is that defects were most frequently noted among those with positive Wassermann reactions; and it should be remarked in this connection that the physical examination was made before the result of the blood test was known. A closer inspection of the table will bring out that while there are few undoubted syphilitic defects noted, yet certain signs which are considered suggestive of congenital syphilis did occur with considerable frequency. If the examinations could have been more thorough, undoubtedly more definite findings would have been reported. The only case of alopecia was found in the group having a positive Wassermann reaction. Rhagades were observed in 10 per cent. of the positives, 0.3 per cent. of the doubtful cases, and not at all among the negatives. Teeth with hutchinsonian markings were observed among the positives and doubtfuls, but not among the negatives. There was nothing distinctive in the findings from examination of the tonsils. Palpation of the glands was more fruitful. In children of these ages it is rather common to find enlargement of the anterior cervical and inguinal glands; but enlargement of the posterior cervicals, occipitals and especially the epitrochlears is looked on with suspicion by most diagnosticians. Among these children, enlargement of these glands appeared to have some relation to the finding of a positive Wassermann reaction.

TABLE 2.—SUMMARY OF PHYSICAL EXAMINATIONS SHOWING OCCURRENCE OF CERTAIN DEFECTS AND BLEMISHES AS NOTED IN CURSORY INSPECTION OF 727 CHILDREN, ARRANGED IN GROUPS DETERMINED BY THE WASSERMANN REACTION OF THEIR BLOOD

	Wassermann Reaction							
	Positive		Doubtful		Negative		Total	
	No.	%	No.	%	No.	%	No.	%
Number of examinations made	20	..	565	.....	142	.....	727	....
Skin:								
Alopecia	1	5	..	.....	..	.....	1	0.14
Furuncles	1	5	14	2.5	..	.....	15	2.06
Eczema	1	5	4	0.7	..	.....	5	0.68
Herpes on lips	..	..	4	0.7	..	.....	4	0.55
Sores at mouth angles	2	10	9	1.6	..	.....	11	1.51
Anemia	4	20	9	1.6	..	.....	13	1.78
Acne	2	10	5	0.9	..	.....	7	0.96
Sallow	1	5	4	0.7	..	.....	5	0.68
Jaundiced	..	..	1	0.2	..	.....	1	0.14
Papular eruption	..	..	19	3.4	2	1.4	21	2.88
Pustular eruption	1	5	6	1.1	..	.....	7	0.96
Macular eruption	..	..	6	1.1	..	.....	6	0.83
Warts	3	15	20	3.5	4	2.8	27	3.71
Skin dry and rough	..	..	3	0.5	..	.....	3	0.41
Peeling palms of hands	..	..	1	0.2	..	.....	1	0.14
Scars:								
Marked furrows at angles of mouth and along lower lip margin	2	10	2	0.3	..	.....	4	0.55
Teeth:								
Teeth decayed	5	25	42	7.5	..	.....	47	6.45
Hutchinsonian teeth	4	20	4	0.7	..	.....	8	1.10
Lower incisors notched	8	40	60	10.6	11	7.7	79	10.75
Upper incisors notched	3	15	48	8.5	16	11.3	67	9.22
Teeth pegged	3	15	5	0.9	..	.....	8	1.10
Teeth irregular	6	30	85	15.0	33	23.2	124	17.00
Teeth protruding	..	..	3	0.5	..	.....	3	0.41
Tonsils and Adenoids:								
Tonsils enlarged, unilateral	3	15	73	13.0	16	11.3	92	12.63
Tonsils enlarged, bilateral	11	55	150	26.5	53	37.3	214	29.40
Adenoids	1	5	78	13.8	41	28.8	120	16.50
Occasional sore throat	3	15	45	8.0	17	12.0	65	8.95
Glands:								
Suppurating	1	5	2	0.35	..	.....	3	0.41
Anterior cervicals enlarged	5	25	429	76.00	106	74.70	540	74.39
Posterior cervicals enlarged	2	10	175	31.00	5	3.52	182	25.00
Epitrochlears enlarged	7	35	42	7.42	10	7.05	59	8.10
Occipitals enlarged	1	5	53	9.37	1	0.70	55	7.55
Inguinals enlarged	4	20	37	6.55	2	1.42	43	5.90
Parotid enlarged	..	..	8	1.42	..	.....	8	1.10
Bone:								
Head squarish with prominent frontals	1	5	..	.....	..	.....	1	0.14
Upper lip slightly flat	1	5	..	.....	..	.....	1	0.14
Nose flattened	2	10	6	1.06	..	.....	8	1.10
Nose deviation	2	10	..	.....	..	.....	2	0.27
Receding forehead	..	..	1	0.17	..	.....	1	0.14
Underweight	3	15	38	6.72	..	.....	41	5.64
Nervousness	3	15	7	1.24	..	.....	10	1.38
Hearing:								
Occasional earache	4	20	69	12.2	16	11.25	89	12.22
Defective hearing	2	10	8	1.42	1	0.70	11	1.51
Eyes:								
Defective vision	2	10	1	0.17	..	.....	3	0.41
Corneal opacity	1	5	..	.....	..	.....	1	0.14
Internal strabismus	3	15	5	0.88	..	.....	8	1.10
Sluggish reaction	..	..	2	0.35	..	.....	2	0.27
Eyestrain	1	5	1	0.17	..	.....	2	0.27
Conjunctivitis	1	5	..	.....	..	.....	1	0.14

On the whole, no case was diagnosed as syphilis on the clinical examination alone. After the results of the blood examinations were known and the children had been grouped as to whether they had a positive, doubtful or negative reaction, it was found that those with clinical symptoms suggestive of syphilis were not all in the positive group, but that many were included with those having a doubtful blood reaction. It was therefore decided to make a careful survey of the immediate relatives, when possible. Accordingly, a nurse and a social worker were instructed to seek out the fathers, mothers, brothers and sisters, and persuade them to have their blood tested. The families of fourteen children with positive reactions, of 263 children with doubtful reactions, and of sixty-six children with negative reactions were investigated, with the results given in Table 3.

TABLE 3.—NUMBER OF CASES OF SYPHILIS AMONG THE FATHERS, MOTHERS, SISTERS AND BROTHERS OF CHILDREN WHOSE BLOOD GAVE A POSITIVE, DOUBTFUL OR NEGATIVE REACTION TO THE WASSERMANN TEST

	Wassermann Reaction		
Cases investigated:	Positive	Doubtful	Negative
Male	5	122	30
Female	9	141	36
Total	14	263	66
Families investigated	12	173	28
Individuals interviewed	32	315	29
Individuals not interviewed	14	198	41
Families from which examinations were made	6	106	1*
Relatives tested	11	173	3
Positive cases found	9	23	1

* It was found impossible to induce parents whose children had negative reactions to come for examination, but in this one instance the parent suspected syphilis and offered to submit to a blood test.

Here it is shown that, when the children had positive blood tests, 82 per cent. of the relatives tested were positive, or, in other words, including the fourteen children originally examined, twenty-three cases of syphilis were found among twenty-five individuals from six families. The findings in the doubtful group were equally interesting. Of the 173 relatives tested, twenty-three, or 13 per cent., were found to have definite four plus Wassermann reactions to specimens of their blood, while the reactions for the children themselves were at best classified as doubtful.

It must be remembered that not all of the relatives were examined; for example, the twelve families from which the fourteen positive children came consisted of sixty living individuals. In estimating the value of these figures, there is no reason to believe that those examined were more likely to be infected than the

others. All were examined who could be found and induced to cooperate. It is therefore only fair to estimate that in these twelve families there are approximately fifty infected individuals. The same reasoning can be applied to the relatives of the group of 263 children with doubtful reactions. They have 513 relatives (fathers, mothers, sisters and brothers) living; and since those tested were selected only because they were those who could be induced to cooperate, it is fair to estimate that approximately 13 per cent. of the 513, or sixty-six, are infected. In calculating the number of infected by this method, it is well to know that mothers as a class showed a higher percentage of infections than either fathers or brothers and sisters. This relationship is brought out by Table 4.

TABLE 4.—POSITIVE WASSERMANN REACTIONS AS DISTRIBUTED AMONG THE FATHERS, MOTHERS, BROTHERS AND SISTERS OF THE CHILDREN IN THE DOUBTFUL GROUP OF TABLE 3

	Male, Number	Female, Number	Total Number	Per Cent.
Cases investigated	122	141	263	
Families investigated	...	...	173	
Individuals interviewed	125	190	315	
Individuals not interviewed	87	111	198	
Families in which father was interviewed			55	
Families in which mother was interviewed			75	
Families in which both father and mother were interviewed			43	
Families from which examinations were made			106	
Fathers tested			48	100
Fathers found positive			7	14
Fathers found negative			41	86
Mothers tested			58	100
Mothers found positive			14	24
Mothers found negative			44	76
Children tested			67	100
Children found positive			2	3
Children found negative			65	97

In interpreting the data of this table, it must again be remembered that but one specimen of blood was examined from each person. No data of other examinations or observations were recorded. Attempts were made to collect the conjugal histories of these parents, but they met with no success. It is possible that there are among the negatives some who could give histories of abortion or miscarriage and who may also have syphilitic stigmas that would be detected by clinical or physical examination.

It must be admitted that, instead of finding an answer to the question which opens this paper, we seem to have raised several others. What does a doubtful Wassermann reaction signify in testing the blood of a child? Has the blood of the children now giving a doubtful Wassermann reaction been frankly positive earlier in life or will it become so in later years? Should they receive antisyphilitic treatment? Of course, in certain instances answers to these questions will be suggested by more complete examinations of the individuals. But we feel that we have demonstrated that a knowledge of the family history is eminently essential for the diagnosis of congenital syphilis.

SUMMARY

Blood tests should be made on all children placed in institutions at the time of their admission.

Complete physical examinations should be made at the same time. The findings in these two examinations should be considered together in determining the presence of congenital syphilis.

When the blood test is doubtful and no definite clinical findings make a positive diagnosis possible, other members of the family should be examined, especially the mother and father.

ANOMALOUS ORIGIN OF GALLBLADDER

REPORT OF CASE

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In the last few years a great deal has been written about injuries of the bile ducts, and many operations for their repair have been devised. The chief reason for accidental injury at operation is that certain unusual anatomic conditions exist in the case. Every surgeon ought to be familiar with the variations that may occur and with the accidents that can happen, even though such knowledge may not prevent all accidents.

Eisendrath [1] recently discussed in detail the variations in the relations of the ducts and their irregularities, as well as those of the supplying arteries. He was able to find only one such case as this on record.[2] For this reason I report this one. Recently Walton [3] described a case in which the left hepatic duct emptied into the gallbladder and the common duct originated from the gallbladder. Kehr [2] remarks that Langenbuch has seen such a condition.

A brief review of the development of the liver and bile ducts will aid one in understanding how such a condition can arise.

The embryonic gut is derived from that part of the yolk sac included within the infolding edges of the embryo which, meeting in the ventral median line, gradually "pinch off" the included part of the yolk sac. The part of the sac included sends outgrowths forward and aft which come to be called the foregut and hindgut, while the intervening portion develops as the midgut. From the foregut, which early reaches from head to septum transversum (later diaphragm) are developed the pharynx, esophagus, stomach and duodenum. The foregut in the region of the septum transversum lies in a mesentery which attaches it not only to the posterior body wall but to the anterior body wall as well. That part of the mesentery reaching from the anterior wall to the foregut is called the ventral mesentery.

Sometime in the third week there is an evagination of the gut wall on the anterior aspect of the foregut near (or quite in) the septum transversum. This outgrowth is said to grow at first into the ventral mesentery, and later into the dorsal as well. From it are developed the liver and the biliary passages. The fact that the opening of the bile duct is on the posterior wall of the gut is explained by the rotation of the gut to the right.

The gallbladder is at an early period of its development buried in the substance of the right lobe. Whether it and the anlage of the right lobe come off by a common stalk from the main stem is not at present known, but in the case herewith reported it is evident that such a supposition would serve to explain the origin of the condition which existed.

REPORT OF CASE

History.—A woman, aged 46, Russian, married, with four children, aged 19, 17, 14 and 7, complained of acute abdominal pain with nausea and constipation. There had been no mis-

1. Eisendrath, D. N.: Anomalies of the Bile Ducts and Blood Vessels, J. A. M. A. **71**: 864 (Sept. 14) 1918; Surg., Gynec. & Obst. **31**: 1 (July) 1920.
2. Kehr, H.: Neue Deutsch. Chir. **8**: 72, 1913.
3. Walton: Brit. J. Surg. **9**: 176 (Oct.) 1921.

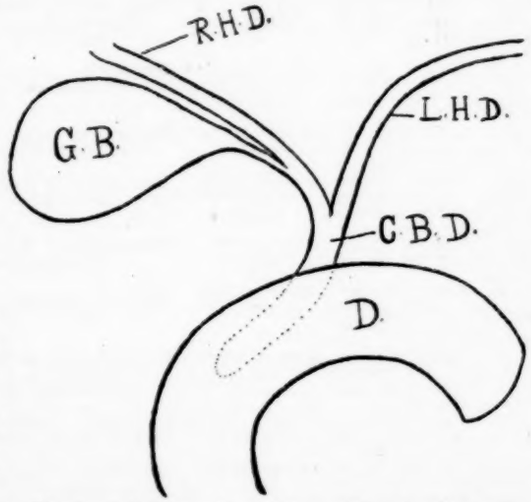
carriages. The patient had never been seriously ill until the present attack. The weight was 175 pounds (79.4 kg.); temperature from 101 to 102.5; pulse from 90 to 110. The digestion had never been very good. She had had several attacks of "indigestion," and turned yellow during the last two attacks, which occurred about a year before I saw her. At present there was no jaundice. The nutrition was good. The patient was fat. There was distinct tenderness in the region of the appendix, and a mobile mass could be outlined.

First Operation.—This mass proved to be an acutely inflamed appendix wrapped in omentum. The whole mass was removed. At the same time examination revealed dense adhesions in the region of the gallbladder. The patient took an anesthetic badly, and the abdomen was closed without drainage and without attacking the gallbladder.

Second Operation.—At the end of a month a second operation was performed for the purpose of treating the gallbladder condition. It was found shrunken, thick walled and adherent to the stomach. Low down in the region of the cystic duct a hard mass was felt; some hard masses were felt in the region of the common duct. It was believed that a stone was present, and it was decided to remove the gallbladder. There was a fistula between the gallbladder and the anterior wall of the stomach near the pylorus. The opening in the stomach was closed. The gallbladder was removed from the fundus upward. No stone was found in it, the hard mass being scar tissue.

Bile flowed in rather large quantities from the liver above the spot where the mass of scar tissue had been, and examination of the specimen disclosed that a part of the duct into which the cystic duct emptied had been removed.

The stump of the severed duct was slit into the common duct, and a probe was introduced into the latter and directed upward. It turned to the left when it reached the liver, and could not be made to turn to the right as it can under ordinary circumstances. It was then clear that the duct, the cut end of which appeared on the under surface of the liver, must be the right hepatic duct. The probe could be passed into it for a distance of about 1½ inches (3.7 cm.), going into the right lobe.



Diagrammatic illustration of the condition found at operation: *R. H. D.*, right hepatic duct; *G. B.*, gallbladder, the duct of which can be seen uniting with right hepatic duct; *L. H. D.*, left hepatic duct; *C. B. D.*, common bile duct; *D*, duodenum.

I concluded that the cystic duct had emptied into the right hepatic duct and that I had removed a segment of the latter. The distance separating the cut tends was about 1¼ inches (3.2 cm.). A catheter was split in two, and one of the tails inserted in the common duct; the other was inserted in the cut end of the right hepatic duct. Each tail was sewed in place with No. 00 twenty-day catgut and the patient was turned on the face for the first twenty-four hours. All of the bile came through the abdominal wound. In three months the patient went home with a biliary fistula, although some bile was coming through the natural channels.

The patient returned eight or nine months later. The discharging sinus was still present, but the discharge failed to give a positive test for bile. Some bismuth was injected into it, and the roentgenograms showed bismuth extending up along the margin of the costal cartilages to the point at which the seventh rib joined the sternum.

Third Operation.—Under ether, methylene blue was injected and the sinus was followed and found to ascend as indicated by the roentgenogram. The cartilages of the ninth, eighth and seventh ribs were necrotic. The perichondrium was separated from them. There was much granulation tissue lying between it and the cartilage, and also between the periosteum and the right side of the lower end of the sternum. The necrosed cartilages were removed, as was also that portion of the sternum undermined by granulation tissue. The granulations were scraped out, and the wound was swabbed with iodin and packed with iodoform gauze. Healing occurred very rapidly, and in four weeks the patient went home entirely well.

Postoperative Course.—Her health remained good until about seven months later, when she returned quite jaundiced, with chills and fever, complaining of pain in the region of the gallbladder. The stools were clay colored. Rest in bed and liquid diet were ordered; bile began to appear in the stool in a few days, and in about three weeks the patient went home feeling better.

She remained fairly well for four or five months, when she again had chills and fever, epigastric pain, vomiting and nausea, with more or less constant jaundice, and she again returned to the hospital—two years after her first operation. She was darkly jaundiced, more than mulatto colored, and had clay colored stools. There was very little tenderness in the region of the gallbladder. The weight was 110 pounds (50 kg.).

Fourth Operation.—It was decided to open the abdomen again. Under intratracheal ether, an incision was made through the old scar. The liver, intestine and stomach were found firmly grown together at the site of the former gallbladder. The duodenum was separated from the liver, and almost at once the knife entered a cavity from which gushed a thick, mucoid, dark colored bile. The cavity was estimated capable of holding 2 ounces (60 c.c.) and I thought that more than that amount of fluid had been mopped up. It seemed to be lined with a thin mucous membrane.

The margins of the opening into this cavity were now approximated to a similar opening in the duodenum, and the edges sewed together as in doing a gastro-enterostomy, a double row of catgut sutures being used. Healing occurred by first intention.

It is now six years since the first operation and about four years since the last. The patient believes she is much less troubled with constipation than she used to be, and she is back to her former weight.

The biliary cavity which I opened most probably grew out between the cut ends of the ducts, the passage here having no muscular walls. Then, as this cavity grew, it probably spread in all directions, and it is possible that in so doing its inner posterior wall came to press against the common duct, thus closing it and producing the symptoms of obstruction; but this is "not proven." The stoma made between this cavity and the duodenum was, I should say, about three-fourths inch (2 cm.) in length.

I do not know how to avoid making the same mistake again. Theoretically, it is very easy; but with tissues infiltrated the way they sometimes are, I feel that I would have to see both hepatic ducts at their point of junction and demonstrate the cystic duct below this before I could be certain that the cystic emptied into the common and not into the right hepatic duct.

St. John's Hospital.

Care of the Eyes.—Children who work hard at their lessons in school should not be allowed to read excessively for their own pleasure at home during the school year, nor should young girls in most instances be urged to keep up with music lessons or other extra studies outside of school hours.—W. M. Carhart, *Pub. Health*, Michigan, September, 1919.

QUANTITATIVE BACTERIOLOGY OF THE TONSILS

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With the recognition of the tonsils as a source of infection in the body, the question of what sort of tonsils should be removed has become important. A common way of deciding whether or not tonsils are dangerous is by their size. Another common procedure is compression of the tonsils to ascertain whether or not pus can be expressed. The bacteriolgist is frequently asked to determine the presence or absence of hemolytic streptococci in the tonsils in accordance with the idea that the presence of hemolytic streptococci is an indication for removal.

It is apparent from the work of Davis [1] and from our own experience [2] that there are no tonsils beyond the first years of life in which no pathologic changes can be found, and that the use of ordinary plating methods has not been of value in determining the degree of pathologic change.

The question as to what sort of tonsils are a menace to health and should be removed and which ones are comparatively harmless is so important that an attempt was made to investigate the significance of the actual number of bacteria present in the interior of the tonsillar tissue as an index to the degree of pathologic change in the tonsil, and to determine whether or not tonsils with large numbers of bacteria per unit weight were more commonly associated with disease in other parts of the body than were those containing comparatively few bacteria.

The procedure was as follows: Tonsils were received in dry sterile medicine glasses, each tonsil separately; and, in order to avoid possible proliferation of bacteria, they were examined at once. They were put on a sterile wire gauze supported by a sterile tripod and washed by allowing 1 liter of sterile 0.9 per cent. salt solution from a wash bottle to run over them. Pieces of tissue from 0.2 to 1.74 gm. in weight were cut from the

RELATION OF BACTERIAL CONTENT OF TONSILS TO THEIR SIZE, WEIGHT AND PATHOLOGIC ANATOMY, AND TO DISEASE IN OTHER PARTS OF THE BODY

Case	Clinical Symptoms	Clinical Diagnosis	Microscopic Description	Anatomic Diagnosis	Predominant Organisms	Weight of Tonsils, Gm.	Bacteria per Gm.	Estim. Total Bact. Content
1.	None, except increased size of tonsils	Hypertrophied tonsils	Lymph follicles hyperplastic; fibrous tissue increased	Chronic hypertrophic tonsillitis	Hemolytic and nonhemolytic streptococci	3.18	400,000	1,272,000
2.	None, except increased size of tonsils	Hypertrophied tonsils	Lymph follicles hyperplastic; crypt walls infiltrated by leukocytes	Hypertrophic tonsillitis	Streptococci (hemolytic); staphylococci; Micrococcus catarrhalis	5.13	402,000	2,062,260
3.	Frequently recurring severe attacks of tonsillitis	Hypertrophied tonsils	Crypts contain leukocytes and masses of bacteria	Hypertrophic and follicular tonsillitis	Nonhemolytic streptococci; staphylococci	3.035	822,500	2,496,287
4.	Frequently recurring sore throat and enlarged cervical glands	Hypertrophied tonsils	Lymph follicles hyperplastic; crypts contain epithelium and leukocytes	Hypertrophic tonsillitis	Staphylococci; hemolytic streptococci; a small diplococcus	5.5	1,000,000	5,500,000
5.	Enlarged tonsils and cervical lymph glands	Hypertrophied tonsils	Lymph follicles hyperplastic; crypts contain masses of bacteria and leukocytes	Hypertrophic and follicular tonsillitis	Hemolytic streptococci; Bacillus mucosus	6.0	1,000,000	6,000,000
6.	Recurring sore throat	Hypertrophied tonsils	Lymph follicles hyperplastic; crypt walls infiltrated by leukocytes	Hypertrophic tonsillitis	Micrococcus catarrhalis; hemolytic streptococci	4.0	1,300,000	5,200,000
7.	Enlarged tonsils; occasional sore throat	Hypertrophied tonsils	Lymph follicles hyperplastic; leukocytes in crypts; fibrous tissue increased	Chronic hypertrophic tonsillitis	Hemolytic streptococci, pneumococci	4.5	1,400,000	7,670,000
8.	Enlarged tonsils and cervical lymph glands	Hypertrophied tonsils	Lymph follicles hyperplastic; epithelium in crypts	Hypertrophic tonsillitis	Streptococcus viridans; staphylococci	6.845	1,590,000	10,883,550
9.	Recurring sore throat and enlarged tonsils	Hypertrophied tonsils	Lymph follicles hyperplastic; crypts contain epithelium and leukocytes	Hypertrophic tonsillitis	Hemolytic streptococci; Streptococcus viridans	6.0	2,000,000	12,000,000
10.	None, except size of tonsils; patient had exophthalmic goiter	Hypertrophied tonsils	Lymph follicles normal; leukocytes and epithelium in crypts; fibrous tissue increased	Chronic hypertrophic tonsillitis	Hemolytic and nonhemolytic streptococci; Micrococcus catarrhalis	4.0	2,000,000	8,000,000
11.	Occasional sore throat	Hypertrophied tonsils	Lymph follicles atrophic; leukocytes in crypts; fibrous tissue increased	Chronic atrophic tonsillitis	Hemolytic streptococci; staphylococci; Streptococcus viridans	4.6	2,105,000	9,683,000
12.	Frequent sore throat	Hypertrophied tonsils	Some lymph follicles hyperplastic; others small; leukocytes and epithelium in crypts	Chronic tonsillitis	Hemolytic streptococci; Streptococcus viridans; staphylococci; Bacillus mucosus	4.4	2,500,000	11,000,000
13.	Frequent sore throat	Hypertrophied tonsils	Lymph follicles hyperplastic; increased fibrous tissue; leukocytes and epithelium in crypts	Chronic hypertrophic tonsillitis	Hemolytic streptococci; streptococcus which does not change blood; staphylococcus	4.87	3,980,000	12,175,000
14.	Frequent severe attacks of tonsillitis	Hypertrophied tonsils	Lymph follicles hyperplastic; epithelium and leukocytes in crypts	Hypertrophic tonsillitis	Hemolytic streptococci; Streptococcus viridans; staphylococci	4.61	8,108,000	37,377,000
15.	Frequent sore throat and frequent attacks of "rheumatism in back"	Slightly hypertrophied tonsils	Lymph follicles atrophic; fibrous tissue increased, obliterating normal structures	Chronic, atrophic, fibrous tonsillitis	Hemolytic streptococci; Streptococcus viridans; staphylococci; Bacillus mucosus	3.8	16,071,000	61,073,320
16.	Tonsillitis; subcutaneous abscesses	"Stumps of tonsils"	Lymph follicles hyperplastic; fibrous tissue increased; leukocytes and epithelium in crypts	Chronic inflammation in tonsillar remnants	Streptococcus viridans; few staphylococci	2.17	31,000,000	67,270,000
17.	Multiple arthritis of wrist, elbow and shoulder joints	Atrophic tonsils	Lymph follicles atrophic; fibrous tissue increased	Chronic atrophic tonsillitis	Streptococcus viridans; staphylococcus	3.2	2,930,000,000	9,376,000,000
18	Arthritis of both shoulder joints	Hypertrophied tonsils	Lymph follicles hyperplastic; leukocytes and epithelium in crypts; fibrous tissue increased	Chronic hypertrophic tonsillitis	Hemolytic streptococcus; Streptococcus viridans; staphylococci	4.0	4,079,000,000	16,316,000,000

1. Davis, D. J.: Experimental Study of Bacteria Isolated from Tonsils, J. A. M. A. **55**: 26 (July 2) 1910.
2. Dick, G. F.: J. Infect. Dis. **13**: 273, 1913.

tonsils with sterile instruments and ground in a sterile mortar which contained a small amount of sand. Dilutions up to 1:1,000,000 were made of this material, and 1 c.c. of each dilution was added to a tube containing 10 c.c. of melted agar and 1 c.c. of human blood, and the mixture was poured into a Petri dish. After forty-eight hours' incubation, the colonies were counted with the aid of a hand lens, and the number of bacteria per gram of tonsil tissue was estimated.

Gross pathologic descriptions of the tonsils and histologic descriptions of paraffin sections from the parts not used for cultures were made.

The table shows the relation of bacterial counts to the size, weight and pathologic change in the tonsils, and to the presence of disease in other parts of the body. It also shows what type of organisms predominated in the plates.

In the series represented in the table, the tonsils from patients who complained of recurring sore throat, or who had at the time of operation enlarged cervical glands, contained from two to twenty times as many bacteria per gram as did the tonsils from patients who did not complain of sore throat or have enlarged cervical glands.

In four instances the tonsils contained more than 16,000,000 bacteria per gram, and, in three of these cases, the patients had some form of arthritis at the time of operation.

There is no apparent relation between the number of bacteria per gram of tonsil tissue and the types of organisms found predominating on the plates. Nor is there any apparent relation between the types of bacteria and the clinical condition of the patients or pathologic condition of the tonsils.

The tonsils which showed the highest bacterial content per unit weight were the relatively small tonsils in which chronic fibrous inflammatory changes had occurred. It was this type of tonsil which was associated with disease in other parts of the body. Large, spongy tonsils, rich in lymphoid tissue, usually contained a smaller number of bacteria per gram, and were less frequently accompanied by disease elsewhere than in the throat and cervical lymph glands. The examination of a single tonsillar remnant is interesting, because it contained a larger number of bacteria per gram than most of the whole tonsils examined.

CONCLUSIONS

The results of this work indicate that tonsils should not be regarded as harmless because they are small. It is often not possible to express pus from the smaller tonsils, because drainage of the crypts is prevented by fibrous tissue. The total bacterial content, as well as the number of bacteria per gram, may be much greater than that of large tonsils.

Quantitative bacteriology is of more aid than is qualitative bacteriology in determining the condition of tonsils that have been removed, and in determining their possible relation to disease elsewhere in the body.

637 South Wood Street.

Venereal Diseases.—In the 217 clinics operating under the joint control of the U. S. Public Health Service and state boards of health during October, 1919, there were 9,686 new admissions and 27,334 remaining from the previous month, making a total of 37,020 under treatment. There were 97,693 treatments administered to the patients under the care of these clinics. Of these treatments 18,072 were the administration of arsphenamin.—*Pub. Health Rep.*, Dec. 5, 1919.

DEFINITION OF EXPERIMENTAL TYPHUS FEVER IN GUINEA-PIGS *

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In a recent article,[1] I pointed out that the body of the guinea-pig reacting to the virus of typhus fever is readily invaded by a variety of bacteria whose presence complicates the typhus infection, but which have no etiologic relation to the specific disease typhus fever. In another article,[2] I showed that the typhus virus, when kept in a variety of culture mediums at 37 C., tends to die off rapidly: in aerobic mediums after five days and in anaerobic mediums—including the Smith-Noguchi, fresh tissue medium—after from twenty-four to forty-eight hours.

Yet Canto [3] has announced recently the cultivation on ascitic agar of staphylococcus-like organisms from splenic material of typhus-infected cadavers, and from the spleen of experimentally infected guinea-pigs, which organisms are considered by him to be the microbic cause of typhus fever, since with them a febrile reaction is induced in guinea-pigs. On this basis he has prepared a vaccine with which 587 typhus patients were injected. As this communication presents only one of a large number of different bacilli, cocci, spirochetes and protozoa which have been reported from time to time as the incitants of typhus fever but which do not satisfy the prerequisites essential for determining the experimental disease in animals, it is obvious that the subject of experimental typhus fever is in a state of confusion and that a clear conception of its definition is now desirable.

Our experience, covering a long period of time and a large number of animals, has taught us to regard *all* the criteria for determining experimental typhus fever in guinea-pigs to be essential in interpreting a critical experiment, for, as I shall immediately describe, each one of the conditions, by itself, may be so obscured by experimental errors or nonspecific reactions that, if an experiment is judged by one or more of these criteria but not by all, the result might lead to misinterpretation or even a false conclusion.

My object in this paper is to draw attention to the conditions necessary to establish experimental typhus fever in guinea-pigs; to indicate the nonspecific or pseudo reactions which should be considered as possibilities in the determination of each of these criteria, and finally to show that no interpretation of an experiment can be made unless all the requirements are met and the nonspecific or pseudo reactions are considered.

CRITERIA FOR DETERMINING EXPERIMENTAL TYPHUS FEVER IN GUINEA-PIGS

There are four criteria for determining experimental typhus fever in guinea-pigs: (*a*) Transmissibility of the virus, made evident by a typical febrile reaction, from the test material to guinea-pigs and from guinea-pig to guinea-pig indefinitely. (*b*) A specific pathologic condition in all of the affected animals in the series of transmissions during the height of the reaction. The macroscopic examination reveals no changes in the organs with the exception of the enlargement of the spleen and a petechial rash in the deeper layers of

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. Olitsky, P. K.: J. Exper. Med. **34**: 525 (Dec.) 1921.
2. Olitsky, P. K.: J. Exper. Med. **35**: 115 (Feb.) 1922.
3. Canto, P.: Rev. d. Inst. Bact., Buenos Aires **2**: 101 (March) 1921.

the skin. The lesions in the different organs are demonstrable by histologic study, and consist of a particular vascular change most numerous about and in the blood vessels of the brain. (*c*) Absence of concomitant or secondary infections by ordinary bacteria (pneumonia, peritonitis, abscesses, pseudotuberculosis or other diseases, and absence of these bacteria from the blood. (*d*) Specific immunity reactions. A guinea-pig, after reaction to the substance to be tested, remains immune to the known active typhus virus and, conversely, a guinea-pig, after reacting to the known typhus virus, remains immune to the test material.[4]

NONSPECIFIC AND PSEUDO REACTIONS

A review of the literature reveals that almost all of the many different micro-organisms which have been advanced as the incitants of typhus fever have failed to satisfy all the requirements. Indeed, in certain instances, as in the case of Canto already mentioned, reliance was placed on only one of the criteria. In the following, we shall demonstrate the nonspecific reactions which can simulate any one of these conditions and may consequently lead to misinterpretation.

The Febrile Reaction.—Friedberger[5] has shown that nonspecific substances, such as normal guinea-pig blood, may induce in guinea-pigs febrile reactions indistinguishable from the course of the fever in experimental typhus infection. Canto,[3] by diminishing the dosage of his staphylococcus-like organism, has also obtained a similar fever. In the studies on typhus fever by Kraus and de la Barrera,[6] it is noted that an occasional temperature curve of normal guinea-pigs resembles that of typhus-infected animals.

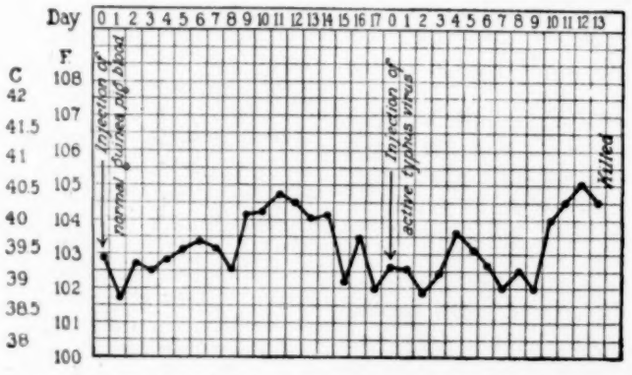

Fig. 1.—The injection of 3 c.c. of normal guinea-pig blood intraperitoneally into a normal animal resulted in a febrile reaction similar to the typical fever of experimental typhus fever in guinea-pigs. On reinjection with active virus, however, the animal showed no immunity, for the second febrile reaction was proved to be a symptom of the experimental typhus.

In our experience we have observed that the intraperitoneal injection of normal guinea-pig blood has in one instance shown a similar febrile reaction (Fig. 1). Febrile reactions were also obtained in nineteen guinea-pigs injected with culture and tissue material not containing the living typhus virus. Although six exhibited the typical histopathologic changes, none satisfied all requirements, especially that of immunity, essential to the confirmation of the typical experimental disease.

It is well known to those employing laboratory animals for experimental purposes that spontaneous infections frequently arise in monkeys, dogs, rabbits, rats and guinea-pigs. Among the more common of spontaneous infections encountered are tuberculosis in monkeys; distemper in dogs; *Bacillus lepisepticus* infections and septicemia in rabbits; pseudotubercular pneumonia in rats, and snuffles, Gaertner type bacillary infections and pasteurellosis in guinea-pigs. Although a careful search may reveal the causative micro-organism, it not infrequently happens that cultures are sterile or missed.

Hence we may conclude that when a test material induces in guinea-pigs a febrile reaction similar to the fever of experimental typhus, it is insufficient, if taken by itself, to indicate the presence of the living typhus virus.

Transmissibility.—In six of our experiments in which guinea-pigs were injected with culture or tissue (brain or spleen) material that contained no living typhus virus, there resulted febrile reactions similar to the fever of experimental typhus. In the first series, by means of the blood removed by cardiac puncture from three animals during the height of fever and injected, respectively, into three normal guinea-pigs, a similar condition was noted as indicated by the febrile reaction. No attempt was made, in this series, to transmit further the blood from the second animal. In another series, by transmission of blood from one animal to another, three successive guinea-pigs showed similar febrile reactions, at which point the experiment was discontinued. In a third experiment, consisting of two parallel series, the fever was observed in animals of three successive passages, but was absent in those of the fourth passage. In one of the two parallel series comprising the latter experiment, the first passage was effected by the injection of diphtheroid bacilli which were not recoverable from the guinea-pigs of the first or second passages; yet from one animal of the third passage a hemolytic streptococcus was isolated in pure culture from the blood. In none of these transmission experiments were all the prerequisites satisfied for determining experimental typhus infection, although in the other of the two parallel series of the last experiment the fever and the particular histopathologic picture occurred, and no ordinary bacteria were found, but the immunity test failed.

Therefore, a transmissible fever in guinea-pigs which resembles that occurring in experimental typhus can be induced with materials other than typhus virus, so that a typical fever which is transmissible is insufficient, by itself, to define the typical experimental disease.

Histopathology.—Kraus and de la Barrera[6] report that the lesions found in the brain of guinea-pigs during the course of experimental typhus in this animal are not specific. They note similar lesions occurring in the brain in the disease of Borna, in *mal de caderas* of horses, and in experimental rabies of hens, and point out the similarity of these lesions to those found in epidemic (lethargic) encephalitis, influenza, poliomyelitis and other infections. Friedberger and Schroeder, in a recent communication,[7] show that

4. In addition to these conditions, Doerr (Centralbl. f. Bakteriol., Orig. **85**: 2, 1921) has added another based on the findings of Weil and Felix (Wien. klin. Wchnschr. **33**: 423, 1920). A rabbit, injected intraperitoneally with a suspension of brain tissue obtained from a guinea-pig during the course of experimental typhus fever, shows in its blood, after an interval of about ten days, agglutinins for Bacillus proteus, Strain X_{19}. We have been unable as yet to confirm this test, although a number of trials have been made.

5. Friedberger, E.: Ztschr. f. Immunitätsforsch. u. exper. Therap. **29**: 125, 1920.

6. Kraus, R., and de la Barrera, J. M.: Rev. d. Inst. Bact., Buenos Aires **2**: 55 (March) 1921.

7. Friedberger, E., and Schroeder, P.: Ztschr. f. Immunitätsforsch. u. exper. Therap. **31**: 386, 1921.

Bacillus proteus X_{19} can induce the same lesions in the brain of guinea-pigs, and conclude therefrom that this bacillus is the microbic cause of typhus fever.

Of nineteen guinea-pigs injected with culture materials, or cerebral and splenic tissue derived from the same species, but free from living typhus virus, six showed the focal lesions, indistinguishable from the typhus lesions, in and about the blood vessels of the brain. A section of the brain from one of these guinea-pigs, from the blood of which hemolytic streptococci were cultivated, is shown in Figure 2. In this animal, as in the others, the vascular lesions and nodular formation of endothelial leukocytes in proximity to the vessel of the gray matter correspond to those described elsewhere [8] as being typical of experimental typhus fever.

In two animals inoculated intraperitoneally with *Staphylococcus aureus*, similar lesions were noted in the brain. In a series of ten guinea-pigs inoculated with Berkefeld filtrates derived from typhus-infected tissues and proved free from typhus virus by transmission and immunity tests, the same lesions were found in the brain of four of the animals.

Thus the histopathologic picture observed in the brain of guinea-pigs during typical experimental typhus can be simulated by a number of different control materials, such as culture mediums, tissue suspensions, bacteria of the ordinary species, and also by the lesions seen in other diseases of obscure or unknown etiology.[9]

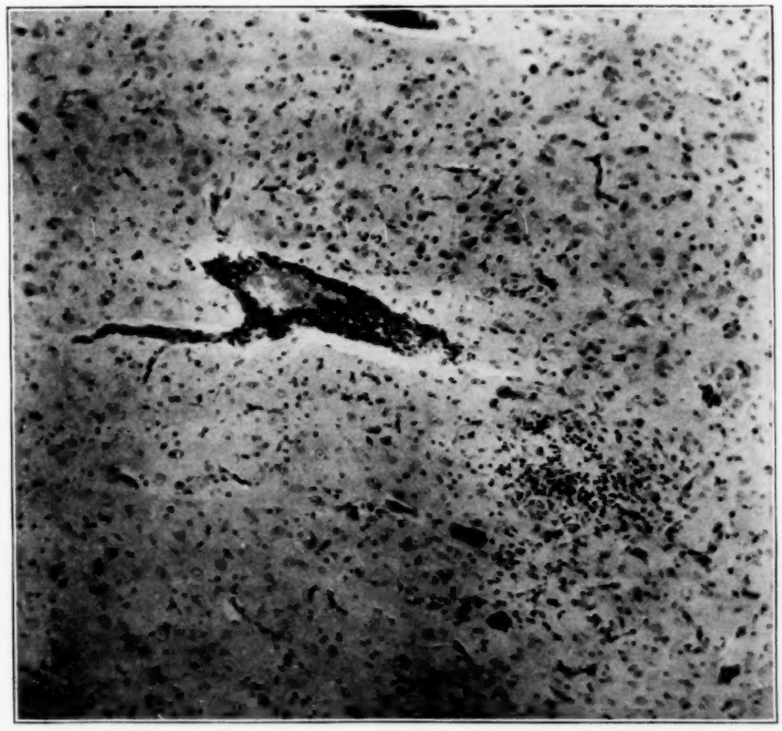

Fig. 2.—Section of brain from guinea-pig injected with nontyphus culture material; to be noted are the vascular lesions and nodular formation (below the vessel); × 108.

The pathologic changes may occur in conjunction with a transmissible fever; but, since either the histopathology or the fever can be produced by nonspecific materials, they cannot be regarded separately, or together, as sufficient to establish a diagnosis of experimental typhus fever in the guinea-pig.

Infection with Ordinary Bacteria.—In our experience, we have found that certain of the nonspecific reactions, chiefly the febrile and the histologic, are attributable to infection with ordinary bacteria. In spite of the fact that at necropsy at the height of reaction an animal may reveal no gross lesions of infection, blood or splenic cultures may yield the bacteria. However, certain organisms which may complicate an experiment are cultivable only with difficulty, such as *Pasteurellae* or delicate streptococci. It is necessary, therefore, in order to satisfy this requirement of the definition of experimental typhus to control bacteriologically, with great pains, the test material or the material used for transmission. We have adopted this routine procedure: for passage experiments to maintain the typhus virus, to plant from 0.5 to 1 c.c. of the heart's blood in 10 c.c. of dextrose veal-infusion broth of a p_H of 7.4, and to incubate the mixture for at least forty-eight hours; for a critical experiment, in addition to the aerobic control, another of anaerobic culture, preferably the Smith-Noguchi medium, is essential.

Therefore, in view of the frequency of spontaneous infections in guinea-pigs, the determination of experimental typhus in this animal cannot be made unless severe tests are conducted to detect ordinary bacteria.

Immunity. — Of 210 guinea-pigs, Anderson [10] found only 4.7 per cent. which failed to react to active typhus virus. Other observers, such as Paltauf and Loewy, Nicolle, and da Rocha-Lima, have reported positive infections in 76 per cent., 84 per cent. and 88 per cent., respectively. Our experiments with 300 guinea-pigs show that only 1 per cent. failed to react to active typhus virus. In view of the occasional resistant animal, it is obvious that interpretation of critical experiments can be made only by repeating immunity tests.

In a paper soon to be published in detail, we report experiments which show that certain substances, not of the nature of a living, multiplying agent, exist in filtrates from typhus-infected guinea-pig tissues which occasionally make those animals refractory to further inoculations of active typhus virus. Hence, supposed cultures of organisms, recovered from typhus-infected materials which are tested to reveal possible immunizing effects, should be free from these substances. In other words, an "immunity" induced by injection of such cultures in early transplants might be due to these immunizing substances derived from typhus materials, but not to the cultures employed.

Finally, in two experiments, supposed cultivable "bodies" which we subsequently discarded because of their occurrence in control, nontyphus, materials, failed to induce reaction in guinea-pigs which were immune to the known passage virus, but normal animals which showed febrile reactions to inoculation of these

8. Olitsky, P. K.: J. Exper. Med. **34**: 365 (Oct.) 1921.

9. Attention may at this point be called to the not infrequent occurrence of nodular encephalitic lesions in the brain of the ordinary laboratory stock of rabbits (Oliver, J.: J. Infect. Dis. **30**: 91 [Jan.] 1922. Bull, C. G.: J. Exper. Med. **25**: 557 [April] 1917), and possibly in guinea-pigs also, with which some of those described as typhus lesions may be identical.

10. Anderson, J. F.: J. M. Res. **25**: 467, 1914.

"bodies" were not rendered immune to further injections of the known active virus. It is essential, then, not only to test supposed cultures in guinea-pigs immune to known passage virus, but also, conversely, and more important, to test animals recovered from the effects of injection of such cultures with known passage virus.

SUMMARY

To summarize the requirements for establishing immunity, the experiments should always be repeated, the possibility should be considered of the presence in cultures of substances found in typhus-infected tissues which are not living, multiplying agents, but which may occasionally induce immunity, and finally, cross immunity tests should invariably be performed.

CONCLUSIONS

Experimental typhus fever presents constantly and regularly certain manifestations which, taken together, stamp it unmistakably as a typical disease. These manifestations have been described as consisting in the guinea-pig of a characteristic febrile reaction, of indefinite transmissibility from animal to animal, particular histologic changes in various organs but mainly in the brain, absence of bacteria cultivable in any aerobic or anaerobic medium whatever, and finally, immunity, determined by cross-immunity tests, to materials carrying known typhus virus.

Besides these manifestations, which all true samples of typhus fever virus produce, what have been termed "nonspecific" or "pseudo reactions" in the guinea-pig, simulating particular manifestations of the action of true typhus virus, have been described. The latter reactions can be induced with a variety of substances, and the failure to recognize this fact may lead, and, indeed, has already led, to erroneous interpretations of inoculation experiments in guinea-pigs in the course of studies on the etiology of typhus fever.

Sixty-Sixth Street and Avenue A.

A TECHNIC FOR THE REPAIR OF RELAXED OR LACERATED PERINEUM *

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There have been a great number of operative methods described for the repair of a lacerated perineum, and each and every one of these I adopted with enthusiasm, to desert sooner or later as unsatisfactory. For the last ten years my assistants and I have been using the technic herein described, and the results have been so satisfactory that we have come to feel that we have at least one definitely standardized technic for this operative necessity on which we may depend for a satisfactory result.

Fig. 1.—Points of pick-up with Allis forceps. The middle forceps are placed at the highest point of the rectocele, where the anterior and posterior vaginal walls meet. Rigid self-retaining retractors do not lend themselves to the ease of denudation that can be accomplished through the use of three separate retractors, which can be moved to any adjustment by assistants.

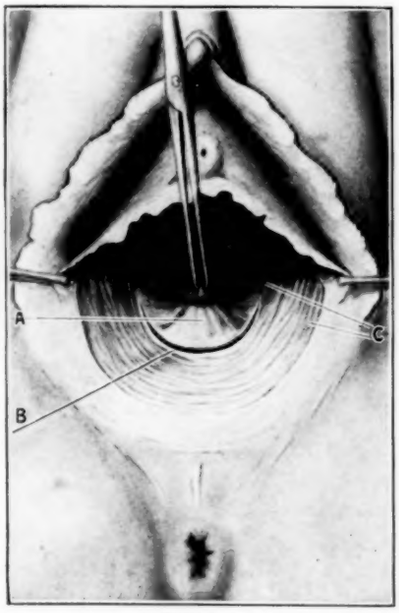

Fig. 2.—*A*, true hernia of rectum, which must be reduced backward and downward to permit midline approximation of relaxed muscle bundles. *B*, incision separating rectocele from levator ani; separation of rectum from muscles and fascia must be extentive enough to provide complete freeing of the rectocele, which results in a crescentic shelf approximately ½ to ¾ inch (from 12 to 19 mm.) in depth consisting of muscles and fascia of perineum. *C*, denuded area.

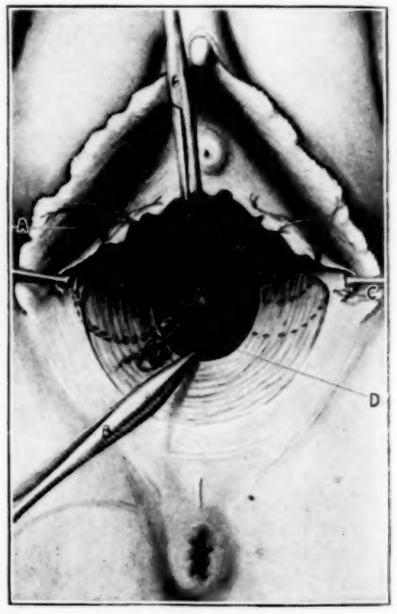

Fig. 3.—*A*, the one suture to be applied in each sulcus; internal bite of needle must not include any bowel wall, picking up only vaginal fascia and mucous membrane. *B*, a rigid instrument reducing the rectocele while second suture passes over and catches vaginal fascia and mucosa at central point as illustrated. The second suture (*C*) is not tied until all remaining approximation is completed. *D*, shelf of levator muscle approximately ½ inch (13 mm.) in length.

No claim is made for the presentation herein of anything new or original, but the salient features of the illustrated technic are to be found in the underlying principles (1) of completely freeing the entire rectocele from the muscles and fascia of the perineum in order to permit a thorough reduction of this herniated portion of the bowel; (2) the definite employment of only nine stitches for any and all types of this operative

* Presented before the Seaboard Medical Association of Virginia and North Carolina, Dec. 10, 1921, Norfolk, Va.

necessity; (3) the fact that these sutures are all interrupted, and (4) its simplicity and ease of execution.

IMPORTANCE OF COMPLETE REDUCTION OF RECTAL HERNIA

It is not my purpose to criticize other methods of perineorrhaphy or to compare this technic with them; but I would like to emphasize the importance and necessity of complete reduction of the rectal hernia, and this cannot be attained except by complete freeing of the rectocele in its entire lower half which, when reduced, permits the approximation of the muscles and fascia of the pelvic floor at a much higher plane and with a greater depth than any other technic with which I am acquainted. Furthermore, I do not feel that I can ever condone any method of perineal repair which utilizes the employment of continuous, figure of eight or complete crown sutures for its completion, believing that the interrupted suture of No. 2 or No. 3 chromic catgut is the best, and feeling with regard to the other type of sutures that in comparison with a chain they are no stronger than the weakest link.

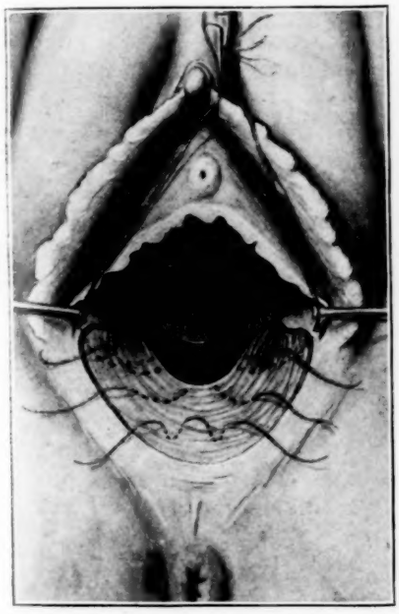

Fig. 4.—Stitch in each sulcus tied and the second suture caught up by clamp, three interrupted sutures beginning and ending at a point half way between the levator shelf and the skin margin. These sutures, when tied, maintain a reduction of the rectocele.

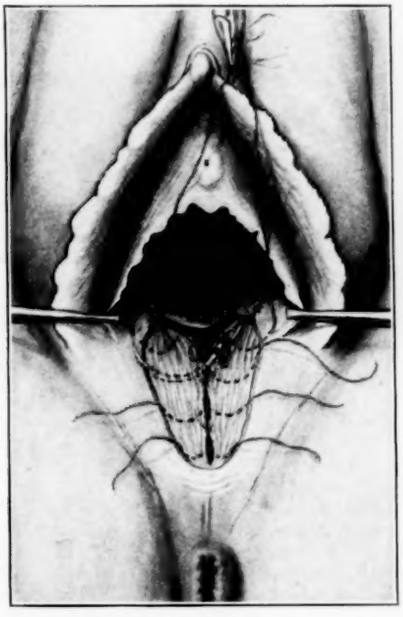

Fig. 5.—Second tier of sutures beginning just under the skin margin and approximating the second plane of muscles and fascia. These are inserted on a plane between the first three approximating sutures, as shown in Figure 4.

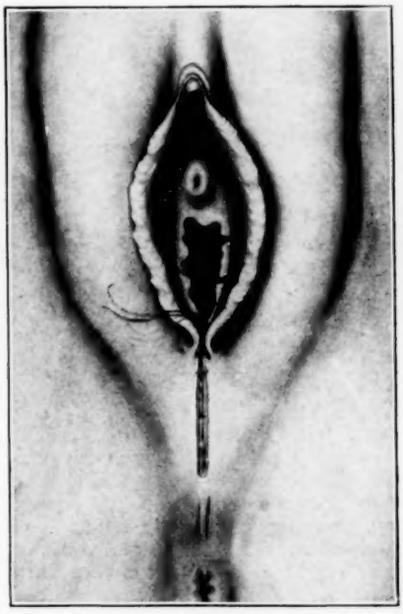

Fig. 6.—Results after all deep sutures are tied. Long suture ends represent stitch 2 (Fig. 3). Skin margins approximated with a loose plain catgut running stitch. Plane of posterior wall of vagina now slopes downward and backward, providing support for bladder.

Abuse of Narcotics in France.—The *Ligue d'Hygiène-Mentale* publishes in its *Bulletin* a letter from the Paris prefect of police on the measures taken to check the illicit traffic in narcotics. There were thirty-six suits of the kind in the courts of the Paris district, and nineteen resulted in a fine of from 50 to 5,000 francs. In 1920, 254 were condemned to from six months to two years imprisonment. In 1921, it was the practice to send the buyers to prison for three or six months while the seller was given a one or two year term and a fine. He protested against the lax international regulations regarding importation of drugs labeled "chemical product" or "free sample." A bill providing for expatriation for five or ten years of those convicted of illicit traffic in narcotics has been passed by the French senate and is now before the chamber of deputies.

ACTINOMYCOSIS OF THE URINARY ORGANS

REPORT OF A CASE OF PYELONEPHRITIS IN WHICH ACTINOMYCES BOVIS WAS FOUND *

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AND
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We consider this case worthy of report, because only ten similar cases can be found in available literature, in only one of which [1] is the species of *Actinomyces* [2] determined by culture. Moreover, the evident difficulty, hitherto, in diagnosing actinomycosis of the genitourinary tract before operation or necropsy, and in differentiating it from tuberculosis, combined with the fact that the methods of treatment of the two infections may differ widely, make it important that more should be known about actinomycotic infections. Certainly, the possibility of actinomycosis should always be considered in cases of suspected tuberculosis in which tubercle bacilli cannot be found.

REPORT OF CASE

History.—J. A. O., a man, aged 35, married, electric welder, entered Brady Urological Institute, May 20, 1919, complaining of pain in the kidneys. The family and personal history was unimportant. In 1918 he had a mild attack of gonorrhea, and

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1. Eustace.

2. Throughout this paper, we employ the term "Actinomyces" as defined in the recommendation of the Committee of the Society of American Bacteriologists on Characterization and Classification of Bacterial Types (Winslow, C.-E. A.; Broadhurst, J.; Buchanan, R. E.; Krumwiede, C.; Rogers, L. A., and Smith, G. H.: The Families and Genera of the Bacteria, Final Report of the Committee of the Society of American Bacteriologists on Characterization and Classification of Bacterial Types, J. Bacteriol. **5**: 191 [May] 1920).

was treated by injections of argyrol and irrigations of potassium permanganate. The disease lasted only two weeks, and there were no complications. The patient dated his present illness from an injury he received in June, 1918. He was helping to lift a heavy weight when those with him let go, thus throwing the entire strain on him. Immediately he was seized with a severe pain in the right loin which lasted for ten hours. The pain did not radiate. There was no nausea or vomiting. There was no hematuria. The rise in temperature and chill which the patient had had with all subsequent attacks was absent. In forty-eight hours all pain and soreness had gone. In March, 1919, the patient had an attack of pain in the right side, which was accompanied by a severe chill and sharp rise in temperature. The pain was very severe, requiring repeated doses of morphin. It radiated into the bladder but not to the end of the penis, testicle or down the thigh. He passed no stone and had no hematuria. This attack lasted for about eight days with varying intensity, during which time there was almost continuous nausea and frequent vomiting. Since then he had had attacks recurring about every two or three weeks. The pain was usually on the right side, but was sometimes on the left. There had never been any frequency, dysuria or hematuria. The patient had never passed stone. There had been pyuria increasing since the first attack.

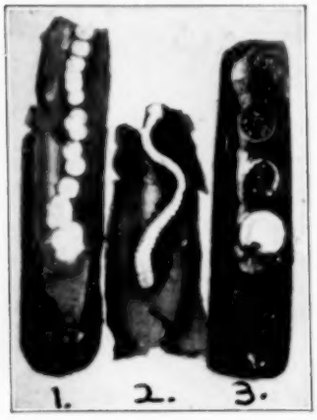

Fig. 1.—Slants of Actinomyces bovis, of seven days' growth, at 37.5 C. (removed from the tubes for photographic clearness). Tube 1, at left, p_H 7.6 beef infusion agar, showing cretaceous nature of surface growth; Tube 2, in center, Loeffler's serum, showing retarded appearance of cretaceous growth at base of slant; Tube 3, at right, hydrocele agar, showing beginning of cretaceous growth in three upper colonies, and a more advanced stage in the lowest.

Examination.—The patient was healthy and robust, was about 5 feet 7 inches (170 cm.) in height and weighed about 175 pounds (79.4 kg.). The mucous membranes were of good color. There was slight pyorrhea. The tonsils were enlarged and slightly inflamed. The eyes were normal. The chest, lungs and heart were negative on physical and roentgen-ray examination. The abdominal walls were soft. No masses were felt to descend beneath the costal margin on deep inspiration. The kidneys were not palpable or tender. The reflexes were normal. There was no general glandular enlargement. The external genitalia were normal except for slight varicocele on the left side. The prostate was a little broader than normal. The right lobe was very irregular along the base, and there was moderate induration on the outer side and at the apex. The same was true of the left lobe, which was slightly smaller than the right. Both seminal vesicles were indistinctly palpable, and showed no pathologic change. There was nothing on examination of the external genitalia or on rectal examination to suggest tuberculosis.

The cystoscope entered with difficulty, owing to stricture of the bulbous urethra. There was no residual urine, and the bladder capacity was normal. The prostatic orifice was inflamed, slightly irregular and slightly edematous, but there was neither prostatic hypertrophy nor contracture. The bladder was diffusely reddened, characteristic of cystitis. The trigon showed a more marked inflammatory reaction than elsewhere; this was most marked around the ureteral orifices, particularly the right, where there was a marked edema. There was no ulceration, trabeculation, stone or tumor.

On the first ureteral catheterization, No. 7 catheters were passed to the pelvis on each side with ease. The urines collected contained a large quantity of pus from both sides, but careful search failed to demonstrate organisms, either pyogenic or acid fast. The functional test of phenolsulphonephthalein given intravenously showed: on the right side, appearance time five minutes, with an output of 15 per cent. in half an hour; on the left side, an appearance time of two minutes, with an output of 30 per cent. in the same time.

Plain roentgen-ray examination of the kidneys, ureters and bladder was negative. A double pyelogram and ureterogram disclosed the pelvis of the left kidney to be contracted, very long, and slightly irregular in outline. There was slight but definite blunting of the minor calices. The picture on the left side was that of pyelitis. The kidney was definitely larger than normal. The ureter showed no change. On the right side the pelvis was larger than that of the left. The outline was slightly irregular. The lower major and minor calices were only slightly changed, but the middle and upper calices presented a marked change. They were greatly blunted and enlarged, and their outline was very irregular and distorted. There was, however, no destruction of tissue as is seen in tuberculosis. The kidney was about two-thirds the normal size. The ureter was normal.

Urine examination revealed color, light yellow; specific gravity, 1.018; reaction, acid; albumin, trace; sugar, none; pus, considerable. Careful examination failed to demonstrate any organism either pyogenic or acid fast. The test of kidney function revealed phenolsulphonephthalein, ten minutes appearance time; 60 per cent. phenolsulphonephthalein excreted in one hour.

Clinical Course.—At first, repeated examinations of smears of the urines obtained by ureteral catheterization were negative for bacteria, but always showed large quantities of pus. The same was true of the bladder urine. Eleven days after the patient entered the clinic for treatment, infection was demonstrated in the bladder urine by culture which showed *Pseudomonas pyocyanea.*

Fig. 2.—Pure culture of Actinomyces bovis from human kidney, magnified 200 diameters.

The cultures were not incubated sufficiently to obtain *Actinomyces.* The patient did not return for more than a month, during which time he had been ill with frequent attacks of colic of extreme severity.

From July 21, 1919, to March 1, 1920, he was treated from time to time by pelvic injections of various drugs in each kidney. The treatment gave no relief to the symptoms.

About March 1, he again developed severe symptoms of cystitis and prostatitis. From this time to November 19 he received prostatic massage, irrigations and instillations of mercurochrome-220 soluble, 1 per cent. This gave great relief. During this time he continued to have renal colics. The teeth had been treated and tonsils removed as a possible source of primary infection, but neither of these apparently improved the kidney condition.

The presence of a few branching filaments in direct smears of centrifugalized urine from the right kidney now led us to suspect actinomycosis. The smears offered a puzzling variety of bacterial forms, from which only a tentative diagnosis could be made, pending cultural confirmation. In addition to the few branching forms, undoubtedly *Actinomyces*, there were many shorter, rigid, unbranched filaments, probably bacillary forms of *Actinomyces*, the similar, but actively motile curved forms, and short, actively motile bacilli, undoubtedly *Pseudomonas pyocyanea*. There were also many coils of filaments, which were so closely interwoven that it was impossible to determine whether or not they branched, and which were probably a mixture of the two organisms, although no such forms were observed in the urine from the left kidney, which never showed *Actinomyces*, but only *Pseudomonas pyocyanea*.

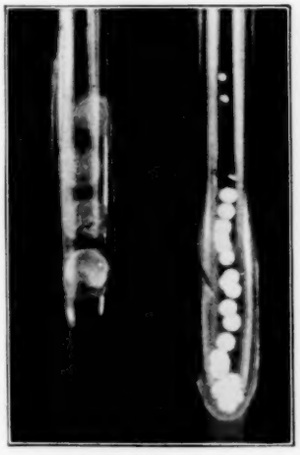

Fig. 3. — Cultures of Actinomyces bovis, seven days, at 37.5 C. Tube at left, growth on hydrocele agar; tube at right, growth on p_H 7.6 beef infusion agar.

As Foulerton[3] has shown, it is often impossible to diagnose actinomycosis by examination of smears, on account of the three forms which actinomycetes commonly take. These are: (1) the characteristic branching mycelium, strongly gram-positive at first, but soon showing in our case a breaking down into beading of gram-positive granules in a gram-negative filament, and entirely gram-negative portions of mycelium adjacent to gram-positive portions of the same filament; (2) the unbranched bacillary form of the fragmented mycelium, sometimes gram-positive, the older forms gram-negative, and (3) the coccoid forms, always gram-positive, which are frequently impossible to differentiate from the usual pyogenic cocci by microscopic examination.

In the case reported here, a few small portions of the branching mycelium were observed in the direct smears, probably many of the bacillary forms, and none of the coccoid. The fact that *Pseudomonas pyocyanea* itself is capable of growing in long filaments, always gram-negative, however, was a further source of comfusion in this case.

Cultures on p_H 5 agar plates were made at this time from the urine from both kidneys. Cultures were also made from the catheters before use, and the sterile water used for irrigation. From both sides *Pseudomonas pyocyanea* developed over night at 37 C. The plates were kept unopened in the incubator at 37 C. for fourteen days. At the end of this time the plates of catheter control remained sterile, the left side urine cultures showed only *Pseudomonas pyocyanea*, and the right side urine cultures showed convex buff colonies, evenly distributed among the dry *Pseudomonas pyocyanea* colonies. These buff colonies, when removed with the platinum needle, could not be penetrated, but came off as whole colonies, the microscopic examination of which revealed the characteristic branching mycelium of actinomycetes. Further study of this organism revealed its identity with *Actinomyces bovis*, a conclusion confirmed for us through the kindness of Dr. McCoy and Dr. Stimson of the Hygienic Laboratory. *Actinomyces bovis* was again grown from the right kidney in our case by the same method on three different dates. *Pseudomonas pyocyanea* was identified by its production of pyocyanin, which, according to Géssard,[4] is the identifying feature of this genus, and by its cultural identity with *Pseudomonas pyocyanea* 279, 280 and 282, furnished us through the courtesy of the Hygienic Laboratory.

3. Foulerton, A. G. R.: The Milroy Lectures on the Streptothricoses and Tuberculosis, Lancet **1**: 551 (Feb. 26) 1910; **1**: 626 (March 5) 1910; **1**: 769 (March 19) 1910.

4. Géssard, C.: Technique d'identification des germes pyocyaniques, Ann. de l'Inst. Pasteur, February, 1920, p. 88.

SUMMARY OF CASES OF PRIMARY GENITO-URINARY ACTINOMYCOSIS FOUND IN AVAILABLE LITERATURE

Author	Patient	Diagnosis	Actinomycosis Recognized	Organism Found	Identity of Organism	Treatment	Termination
1. Peneet	Not stated	Cystitis	At time of treatment	In nodules in pus in urine	"Actinomyces"	Not stated	Not stated
2. Stanton	Man, aged 53	Cystitis; pyelonephritis	Postmortem	In kidney abscesses	"Actinomyces"	Not stated	Fatal
3. Leger	Male	Not stated	Not stated	Glans penis	"Actinomyces"	Not stated	Not stated
4. Earl	Not stated	Not made	Postmortem	Abscess of kidney and bladder; brain	"Actinomyces"	Not stated	Cerebral actinomycosis; fatal
5. Kunith	Boy, aged 4¾ years	Pyelonephritis	Postoperatively	In urine after operation, and in kidney abscesses	"Actinomyces"	Operative	Recovery
6. Cohn	Man, aged 46	Pyelonephritis; prostatitis	At time of treatment	In urine and prostatic secretion	"Actinomyces"	Not stated	Not stated
7. Kellock	Female	Probable tuberculosis of right kidney	Postoperatively	In kidney lesions	"Actinomyces"	Operative: potassium iodid	Recovery
8. Eustace	Man, aged 35	Chronic inflammatory process; probably tuberculous	Postoperatively	In testicle and cord	"Actinomyces bovis"	Operative: followed by KI, 5 grains three times a day for 3 months	Recovery
9. Israel	Man, aged 33	1. Kidney stone 2. Actinomycosis	During treatment	In exudate from fistula, and in urine	"Actinomyces"	Operative	Recovery
10. Israel	Woman, aged 60	Perinephritis	After nephrectomy	In kidney lesions	"Actinomyces"	Operative	Recovery
Summary	6 male 2 female 2 not stated Age from 4¾ to 60 years	2 cases, not made 2 cases, probably tuberculosis 1 case, perinephritis 1 case, cystitis 1 case, cystitis and pyelonephritis 1 case, pyelonephritis and prostatitis 1 case, kidney stone and actinomycosis	3 during treatment 4 postoperatively 2 postmortem 1 not stated	3 in kidney lesions 1 in kidney, bladder and brain lesions 1 in kidney lesions and urine 1 in urine 1 in urine and exudate from fistula 1 in urine and prostatic secretion 1 in glans penis 1 in testicle and cord	9 "Actinomyces" 1 "Actinomyces bovis"	3 operative 2 operative and KI 5 not stated	5 recovery 2 fatal 3 not stated

From January, 1921, after the discovery of *Actinomyces*, until last seen, the patient has been taking potassium iodid, beginning with 10 grains (0.65 gm.) three times a day, and increasing a grain each day. The treatment is to be continued at 75 grains (5 gm.) a day. The drug is recommended in the literature as the only one having any influence on actinomycotic infections in other parts of the body. Unfortunately, the patient has not returned to the clinic, and at present we are unable to report the further history.

COMMENT

The patient is a very healthy looking man of splendid physique. As far as we have been able to determine, there are no lesions in any other part of the body. He has an infection of both kidneys with an organism rarely found, *Pseudomonas pyocyanea*, complicated with the presence of *Actinomyces bovis* in the right kidney, an even rarer finding. It is impossible to determine the relative pathogenicity of *Actinomyces* and *Pseudomonas pyocyanea* in this case. There is however, a slowly progressing decrease in function of the right kidney with compensatory increase in the left.

After the patient has now been treated for two years with practically all drugs, both old and proved, and new and experimental, without the slightest benefit, one would naturally wonder what procedure to pursue. Would it seem advisable to remove the right kidney which contains *Actinomyces* and which is responsible for by far the majority and most severe renal colics? It would throw extra strain upon the infected left kidney, which is probably doing its maximum work; and, should the infection on this side then progress, it would unquestionably shorten the patient's life. In our minds, right nephrectomy is definitely contraindicated on account of pyelitis of the left side, though the symptoms are distressing and beyond relief by treatment, as radical as can be given.

LITERATURE

In reviewing reports of actinomycotic infections, the varied nomenclature and the lack of complete identification of many of the organisms observed make confusion inevitable. For this reason we shall cite such cases of so-called "primary" genito-urinary infections found under all of the names used for this group. Such cases are described by Israel,[5] Kunith,[6] Stanton,[7] Cohn,[8] Kellock[9] and Eustace.[10] In addition, Rosenstein[11] cites the cases of Poncet, Leger and Earl. A summary of these cases is given in the accompanying table. *Pseudomonas pyocyanea* seems to be a rare cause of infections localized in the genito-urinary tract. Kidney infections are reported by LeNoir,[12] Bernhardt,[13] Blumer and Lartigau,[14] Klieneberger,[15] Fränkel,[16] Scheidemandel,[17] Campbell and Rhea,[18] Ashner[19] and Haines.[20] Cases of cystitis due to this organism are described by Barker,[21] Jadkewitsch,[22] Motz,[23] Brown[24] and David.[25] Heiman[26] reports a case of bilateral hydro-ureter with *Pseudomonas pyocyanea* infection. Perkins[27] and Hirschberg[28] have observed cases of orchitis due to this organism.

NOTE.—Since studying this case, one of us (J. H. H.) has found actinomycetes in two other cases, which will be reported when the histories are complete.

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6. Kunith: Ein Fall von primärer Nierenaktinomykose, Deutsch. Ztschr. f. Chir., February, 1908, p. 181.
7. Stanton, E. M.: Actinomycosis limited to the Urinary Tract, Am. Med., March 17, 1906, p. 401.
8. Cohn, T.: Pyonephritis et Prostatitis actinomycotica, Berl, klin. Wchnschr., Aug. 14, 1911, p. 1497.
9. Kellock, T. H.: Some Clinical Features of Actinomycosis, Lancet **1**: 241 (Jan. 25) 1913.
10. Eustace: Primary Actinomycosis of Testicle, Brit. M. J. **2**: 1704 (Dec. 16) 1899.
11. Rosenstein, P.: Die Aktinomykose der menschlichen Harnorgane, Berl, klin. Wchnschr., Feb. 4, 1918, p. 115.
12. LeNoir, M. P.: Note sur un cas d'infection urinaire mixte: Presence du bacille pyocyanique dans l'urine humaine, Compt. rend. Soc. de biol., Jan. 18, 1896, p. 71.
13. Bernhardt, R.: Der Bacillus des grünen Eiters in den Harnwegen, Arch. Dermat. u. Syph. **52**: 349, 1900.
14. Blumer, G., and Lartigau, A. J.: A Report of Three Cases of Ascending Urinary Infection Due to the Bacillus Pyocyaneus and the Proteus Vulgaris, New York M. J. Sept. 22, 1900, p. 495.
15. Klieneberger, C.: Pyozaneusinfection der Harnwege mit hoher Agglutinbildung für Pyozaneusbazillen und mit agglutination von Typhusbakterien, München. med. Wchnschr. **54**: 1330, 1907.
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17. Scheidemandel, E.: Ueber die Bedeutung der bakteriologischen Harnuntersuchung für die Diagnose und Therapie (Speziell der akuten Nephritis), München med. Wchnschr. **60**: 1722 (Aug. 5), 1913.
18. Campbell, R. P., and Rhea, L. J.: Acute Infective Nephritis, Surg. Gynec. & Obst. **27**: 611 (Dec.) 1918.
19. Aschner, P. W.: Two Unusual Cases of Pyonephritis, J. A. M. A. **74**: 320 (Jan. 31) 1920.
20. Haines, W. H.: Pyelitis of Unusual Origin, Urol. & Cutan. Rev., December, 1920, p. 698.
21. Barker, L. F.: The Clinical Symptoms, Bacteriologic Findings and Postmortem Appearances in Cases of Infection of Human Beings with Bacillus Pyocyaneus, J. A. M. A. **28**: 213 (July 31) 1897.
22. Jadkewitsch, W. A.: Sur Lehre von der Pathogenität des Bacillus Pyocyaneus, Baumgarten's Jahresbericht, 1896, p. 355.
23. Motz, M. B.: Note sur un cas d'infection urinaire par le bacille pyocyanique, Compt. rend. Soc. de biol., Feb. 1, 1896, p. 128.
24. Brown, T. R.: Cystitis Caused by Bacillus Pyocyaneus, Maryland M. J., May, 1900, p. 221.
25. David, V. C.: A Bacteriological Study of Fifty Cases of Nontuberculous Diseases of the Bladder and Kidney, Surg., Gynec. & Obst., April, 1914, p. 432.
26. Heiman, H.: A Case of Bilateral Hydro-Ureter; Chronic Pyocyaneus Infection, Am. J. Obst., July, 1913, p. 183.
27. Perkins, R. J.: Report of nine cases of Infection with Bacillus Pyocyaneus, J. M. Res., 1901, p. 281.
28. Hirschberg, M.: Akute Orchitis durch Pyocyaneusinfektion, Deutsch. med. Wchnschr., Oct. 24, 1907, p. 1782.

Clinical Notes, Suggestions, and New Instruments

WHEN APPENDICITIS IS NOT APPENDICITIS: A CASE OF DIVERTICULITIS OF THE CECUM

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Removal of the appendix has come to be regarded as an exceedingly simple operation. Indeed, in most communities the family physician, who usually first sees these cases, is himself willing to operate. It is not at all uncommon to hear the general practitioner say: "I do my own surgery in simple cases like appendicitis."

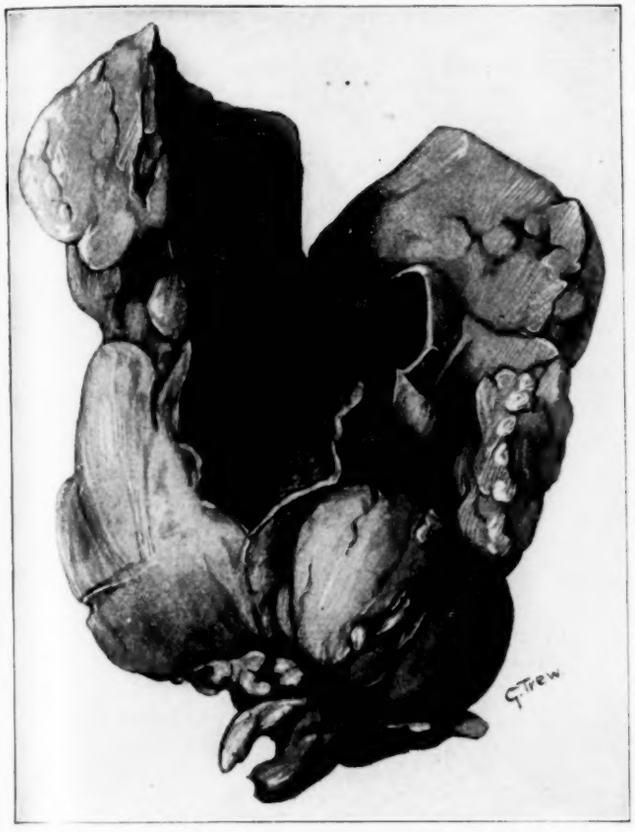
Considered from the standpoint of operative technic, truth compels the admission that when a case is simple it *is* simple, and that the majority of cases, perhaps, belong to this class. At the same time, certain cases of appendicitis test the skill as well as the judgment of the operator to the limit. There are few more difficult operations in abdominal surgery than the removal of an adherent retrocecal appendix may prove to be, and the several problems arising in the presence of a contaminated peritoneum call for the exercise of the maturest judgment.

But when appendicitis proves not to be appendicitis? Assuming that no method of investigation has been omitted and that the diagnosis seems absolutely clear, it has happened to every surgeon of large experience to find himself confronted with a totally different and far more formidable condition on opening the abdomen.

Four times in the recent past such disconcerting experience has fallen to my lot. One case required extensive resection of the caput coli; in two others the lesions were found in the terminal ileum, requiring resection of several inches and end-to-end anastomosis; the fourth case could be handled only by complete excision of the cecum. The pathology in the last mentioned case was so unusual and interesting that a brief report of the case is here given:

A well nourished man, aged 53, a physician, had considerable, though not unbearable, abdominal pain. The history

was rather indefinite. Several times in the last few years he had had attacks of pain in the lower abdomen of moderate severity, which he attributed to constipation, from which he suffered more or less at all times. The present attack had been continuous and increasingly painful for the last three days. His temperature was 101, and pulse, 95.



Specimen opened, showing fecalith in its bed.

Late in the afternoon of May 5, 1921, I was called, and found him in bed. On palpation there was marked rigidity of the right rectus and pronounced tenderness about the region of McBurney's point. A well defined mass of firm consistency could be plainly felt at the latter situation.

The blood count revealed a leukocytosis of 22,500, with 93 per cent. polymorphonuclears.

The diagnosis of acute appendicitis and the need of immediate operation seemed equally positive, and the patient was at once sent to the hospital.

At 10 p. m., the abdomen was opened through the rectus, and the mass delivered without difficulty. This proved to be a greatly thickened cecum with a distinct tumor as large as a medium sized fist occupying the whole of the space between the origin of the appendix and the ileocecal junction. *The appendix was not involved.*

The surface of the mass was smooth, and the trouble seemed definitely limited to the structures in hand. There were numerous areas of necrosis of variable size, the largest being at the junction of the tumor mass with the ileum and involving both structures.

It was soon apparent that nothing less than a total excision of the cecum must be undertaken. This was done, an end-to-end-side anastomosis of the ileum to the ascending colon being made with sutures. The patient was returned to bed in good condition, and made a rapid and complete recovery, leaving the hospital in three weeks.

The specimen was opened at the most prominent part; a spheroidal fecalith approximately three-fourths inch (2 cm.) in diameter occupied a mucous-lined nest more than an inch (2.5 cm.) from the lumen of the cecum. At one point the mucous lining of the pocket was ulcerated entirely through, as though the concretion were in the act of migrating to new quarters. Evidently it had formed in a diverticulum of the cecum, and, as it increased in size, pressure necrosis and extensive inflammatory deposit had gradually taken place.

The report of the pathologist was in accordance with the foregoing. Numerous sections showed only inflammatory tissue with foci of necrosis scattered throughout the mass.

Hollingsworth Building.

A BELT FOR LIMITING THE RESPIRATORY EXCURSION IN CASES OF PULMONARY TUBERCULOSIS

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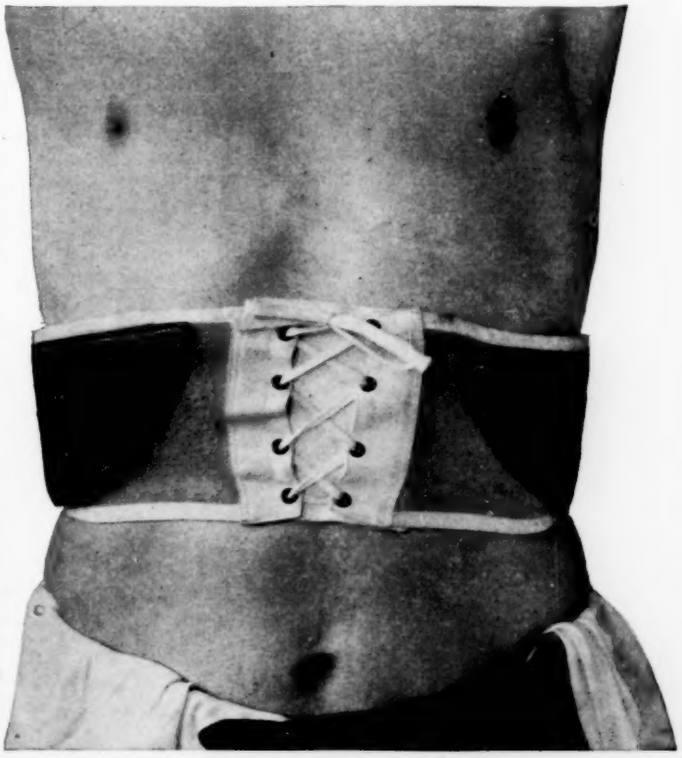
Sewall and Swezey[1] describe a scheme for limiting the motion of the upper ribs in cases of pulmonary tuberculosis by the use of a constricting band from 3 to 3½ inches (7.5 to 9 cm.) wide, which is worn around the chest, fitting as high as the axillae will permit.

I have used in many cases of pulmonary tuberculosis a specially designed belt for the purpose of chest constriction. The method I have used differs from that of Drs. Sewall and Swezey in that the upper part of the thorax is not restricted.

The belt illustrated here encircles the lower portion of the chest, which, on account of a more extensive respiratory excursion, is easier to restrict than the more rigid and less expansive upper thorax.

The belt which I have found most useful for this purpose is made of moleskin cloth. It is 5 inches (12.7 cm.) wide, and is adjustable by having a lace in front, similar to those used in abdominal belts and corsets. The part of the belt which fits over the floating ribs is reenforced by a pad 1 inch (2.5 cm.) thick, which is made of curled hair.

It has been found that a belt constructed in this manner applies an even and continuous pressure over the floating ribs,



Belt for limiting respiratory excursion in pulmonary tuberculosis.

and restricts the respiratory excursion of this part of the chest without being uncomfortable.

The use of this type of bandage has been found of benefit in acute as well as chronic cases of pulmonary tuberculosis

1. Sewall, H., and Swezey, S.: Am. Rev. Tuberc. 5: 547 (Sept.) 1921.

in which there is a great amount of moisture in the lungs, causing violent, excessive and almost continuous coughing; and, if worn sufficiently tight, it modifies the violence and frequency of the cough, and apparently lessens the amount of sputum. By restriction of the respiratory excursion, we lessen the unnecessary harmful and forced inspiration which precedes each cough, thereby lessening the dangerous aspiration of infectious exudates into adjacent normal lung tissue. Again, constriction of the chest in this manner, while lessening the violence and frequency of the cough, at the same time lessens the traumatic damage violent coughing does to the lungs, heart and pleura. It likewise lessens in a marked degree the disturbance to the digestive organs which so usually not only accompanies the cough, but also is largely caused by the cough.

Further, in definite continuous and comfortable restriction of the respiratory excursion in tuberculous lesions of the lungs, we not only lessen the violence and frequency of the cough, but in a measure attain a degree of rest for the infected parts which is so essential to healing and ultimate recovery from any disease. In cases in which the use of artificial pneumothorax is impracticable, this method of chest restriction becomes available, and in a less pronounced measure accomplishes much good in such cases.

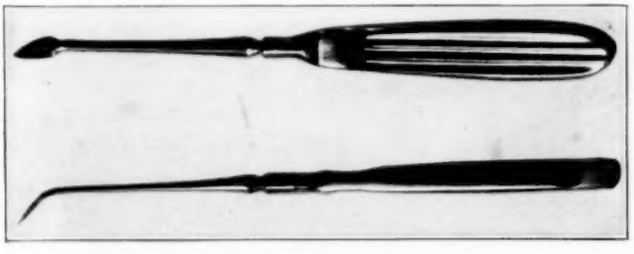
What is said here relative to constriction of the chest wall in tuberculosis is also applicable in many cases of pneumonia.

A NEW HYSTERECTOMY KNIFE

WILLIAM EDGAR DARNALL, M.D., ATLANTIC CITY, N. J.

This knife is 8 inches (20 cm.) long. The length of the blade is nine-sixteenths inch (1.4 cm.), and the width of the blade at the base, one-fourth inch (6.35 mm.). The blade, which is two edged, is oval, and tapers to a point. It is set at an angle of 45 degrees to the shaft. The handle is similar to the handle of a bone curet and affords a firm grasp.

My reason for devising this knife was the difficulty experienced in making dissections of the uterus deep in the pelvis with a straight knife or scissors. Its main usefulness is in those cases in which the pelvis is small, with low posterior fibroids of the uterus which almost fill the space between the uterus and the sacrum, or in like fibroids anteriorly under the pubic bone where the space is small and the uterus immovable. It is often difficult to get under the tumor with a straight scalpel and make a clean supravaginal amputation of the uterus. With this angulated knife the performance becomes



Hysterectomy knife.

simple and easy. It is also most useful in severing the uterosacral ligaments posterior to the uterus in certain panhysterectomies and in amputating the upper vagina when the parts are fixed and the space is small. I have used this knife now for two years and have found great satisfaction with it. It is made by Harvey Pierce & Co., Philadelphia.

1704 Pacific Avenue.

Cause of Idiopathic Epilepsy.—The cerebral cortex has been raked over and over again by successive generations of neurohistologists without yielding up the secret of the cause of idiopathic epilepsy, and it may be that the search, transferred from this barren field to that of the autonomic nervous system, will prove more fruitful.—Percy Sargent, *Brain* **44**:318, 1921.

A RUBBER STOPPER FOR CONTAINERS USED IN PREPARING BLOOD SERUM FOR INTRASPINAL INJECTIONS

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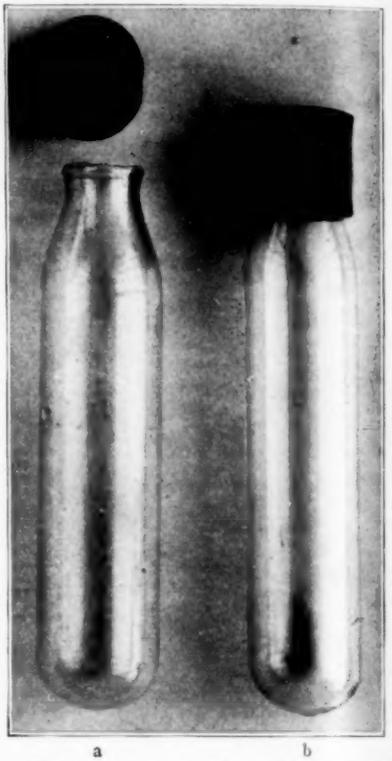
First Assistant in Section of Dermatology and Syphilology, Mayo Clinic, and Fellow in Dermatology, the Mayo Foundation

The use of gauze and cork stoppers for glass containers in the preparation of blood serum for intraspinal injections has not been altogether satisfactory, and in the Mayo Clinic recently such stoppers have been replaced by rubber stoppers, which eliminate most of the objectionable features of the older method.



a b

Fig. 1.—*a*, glass container with narrowed top and rolled edges; *b*, glass container with rubber stopper in place.

The glass container with a gauze stopper requires a large amount of time and material. Such stoppers can be used but once. To avoid forcing the stopper into the blood while centrifuging, it is necessary to fasten the gauze edges against the outside of the container with rubber bands. Small pieces of lint and gauze invariably drop into the blood during the centrifuging. There is great risk of bacterial contamination by the edges of the container and gauze stopper.

Figure 1 *a* shows the container with the new rubber stoppering device. The rubber stopper (Fig 2) is made by boring a hole into the base of a standard rubber stopper of the size to fit over the mouth of the container. The diameter of the hole is gradually increased as it is bored. The stopper should fit snugly over the top of the container and down on the side for a distance of from 0.8 to 1.25 cm. (Fig. 1 *b*). The number of glass containers desired are sterilized together unstoppered. The number of rubber stoppers desired are wrapped in a towel and autoclaved for forty minutes under 15 pounds steam pressure. After each pipetting a fresh sterile stopper is used. The rubber stoppers are seldom soiled with blood or serum and are easily cleaned.

Fig. 2.—Longitudinal section of rubber stopper.

The advantages of the rubber stopper are that it (1) eliminates waste of gauze and cork stoppers and rubber bands; (2) prevents contamination of the serum by foreign matter; (3) reduces the time and number of assistants; (4) lessens the risk of bacterial contamination from all sources, and (5) lessens materially the cost of preparation of the serum.

It is important to note that these rubber stoppers should be prepared before use in accordance with the technic of Stokes and Busman[1] by soaking in 5 per cent. sodium hydroxid solution over night.

1. Stokes, J. H., and Busman, G. J.: Tubing as a Cause of Reaction to Intravenous Injection, Especially of Arsphenamin, J. A. M. A. **74**: 1013-1017 (April 10) 1920.

A NEW SIGN IN GASTRIC ULCER

J. M. ANDERS, M.D., PHILADELPHIA

I have observed that epigastric tenderness is more marked when the patient is standing or sitting than when lying in the dorsal decubitus position, in gastric ulcer. This sign is most conspicuous in cases in which the ulcer is situated on the anterior wall of the stomach. It is easily conceivable that the abdominal wall lies against the base of the ulcer when the patient is in the erect posture, but drops away when he is in the dorsal decubitus, so that the slightest pressure from without, when standing, is sufficient to excite sensitiveness. It is well known that patients suffering from this condition will assume postures that tend to obviate the mechanical pressure of adjacent internal organs on the ulcer.

The same sign, increased tenderness on standing, may be observed in cases of gastric carcinoma situated on the anterior wall of the stomach, although less marked and less circumscribed than in ulcer. In malignant disease, the tenderness is more commonly associated with a palpable tumor than in ulcer.

This increased sensitiveness, like the spot of tenderness when ulcers are located elsewhere than on the anterior wall, corresponds to the site of the pain after food. No use has been made by me of the algesimeter of Boas to determine the precise degree of epigastric hypersensitiveness, but I believe that the difference in intensity is great enough to be easily noted by the use of the index finger. Of course, no diagnostic value would attach to forms of supersensitiveness on assuming the erect posture not strictly circumscribed in a fixed situation. It is not improbable, in view of my personal observations, that this spot of increased tenderness may obtain in a certain proportion of the cases at least in which the ulcer is situated elsewhere than on the anterior wall, e. g., either the lesser or greater curvature.

1605 Walnut Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ALYPIN.—The hydrochloride of 2-benzoxy-2-dimethyl-amino-methyl-1-dimethyl-amino-butane. — $CH_3.CH_2.C(C_6H_5COO)[CH_2N(CH_3)_2].CH_2N:(CH_3)_2.HCl$.

Actions and Uses.—Alypin is a local anesthetic, claimed to be equal to cocaine, but is not a mydriatic. It is said not to produce disturbance of accommodation and to be less toxic than cocaine, but the evidence as to the relative toxicity of alypin and cocaine is rather conflicting. Death was reported in one case from the injection of about 7.4 Cc. of a 10 per cent. solution into the urethra and bladder; severe poisoning has resulted from smaller amounts.

Dosage.—Alypin is used in solutions the strength of which is about the same as that of cocaine hydrochloride. In ophthalmology, 2 to 4 per cent.; in rhino-laryngology, 5 to 10 per cent.; in urology, 1 to 4 per cent.; in minor surgery, ½ to 2 per cent.; in dentistry, 2 per cent.

Alypin solutions may be sterilized by boiling the required amount of water for 10 minutes in a test-tube stoppered with cotton; the drug is then added and the boiling continued over a small flame for another minute. Solutions should be freshly prepared. Epinephrine preparations may be added when a vasoconstrictor effect is desired.

Manufactured by The Bayer Co., Rensselaer, N. Y. (Winthrop Chemical Co., Inc., New York, distributor). U. S. patent 808,748 (Jan. 2, 1906; expires 1923). U. S. trademark 44,608.

Alypin is a white, crystalline powder; odorless; taste bitter, hygroscopic. It is very soluble in water; freely soluble in alcohol and chloroform; insoluble in ether. Its aqueous solutions are neutral and are not rendered turbid on the addition of sodium bicarbonate solution in moderate quantities. Its aqueous solution may be sterilized by boiling for a period not exceeding five minutes without decomposition. Two and four per cent. aqueous solutions are quite stable, but weaker solutions are likely to become moldy. It should be protected from the air in well stoppered containers. With the aqueous solution (1:100) potassium dichromate solution produces an orange-yellow, crystalline precipitate, which is soluble in hydrochloric acid. Potassium permanganate solution produces a violet, crystalline precipitate, which turns brown on standing. The aqueous solution of alypin (1:100) gives precipitates with potassium mercuric iodide solution, iodine solution, picric acid solution, gold chloride solution and many other alkaloidal reagents; also it gives precipitates with potassium iodide solution and mercuric chloride solution. Mix 0.1 Gm. of alypin with 1 Cc. of sulphuric acid, warm the mixture to 100 C. for five minutes and carefully add 2 Cc. of water. The odor of ethylbenzoate is developed. On cooling the mixture, crystals separate which are dissolved on adding 2 Cc. of alcohol.

Dry about 1 Gm. of alypin, accurately weighed to constant weight at 100 C. The loss should not exceed 2 per cent.

Incinerate about 0.5 Gm. of alypin, accurately weighed; the ash does not exceed 0.1 per cent.

NEOARSPHENAMINE (See New and Nonofficial Remedies, 1921, p. 45).

Novarsenobenzol-Billon.—A brand of Neoarsphenamine-N. N. R.

Manufactured by Powers-Weightman-Rosengarten Co., Philadelphia, by license of Les Etablissements Poulenc Freres, Paris, and under U. S. patent 13,848 (Dec. 15, 1914; expires 1931) by license of the Chemical Foundation, Inc.

Novarsenobenzol-Billon, 0.6 Gm. Ampules.
Novarsenobenzol-Billon, 0.9 Gm. Ampules.

PERTUSSIS BACILLUS VACCINE (See New and Nonofficial Remedies, 1921, p. 303).

G. H. Sherman, Detroit.

Whooping Cough Vaccine.—Marketed in 10 Cc. vials, each cubic centimeter containing 2,000 million killed pertussis bacilli.

TYPHOID VACCINE (See New and Nonofficial Remedies, 1921, p. 310).

G. H. Sherman, Detroit.

Mixed Typhoid Vaccine.—Marketed in 10 Cc. vials, each cubic centimeter containing 1,000 million killed typhoid bacilli and 500 million each of paratyphoid bacilli A and B.

MIXED BACTERIAL VACCINES (See New and Nonofficial Remedies, 1921, p. 314).

G. H. Sherman, Detroit.

Acne Staphylococcus Vaccine.—Marketed in 10 Cc. vials, each cubic centimeter containing 40 million killed acne bacilli and 1,000 million killed Staphylococcus albus.

COLON BACILLUS VACCINE (See New and Nonofficial Remedies, 1921, p. 299).

Persson Laboratories, Mount Clemens, Mich.

Bacillus Coli Antigen (No. 50).—Marketed in vials of 20 Cc., each cubic centimeter containing 1,000 million killed colon bacteria, preserved with cresol.

STAPHYLOCOCCUS VACCINE (See New and Nonofficial Remedies, 1921, p. 306).

Persson Laboratories, Mount Clemens, Mich.

Furunculosis Vaccine Mixed-Persson (No. 37).—Marketed in 20 Cc. vials, each cubic centimeter containing 2,000 million killed staphylococcus aureus and 2,000 million killed staphylococcus albus.

Staphylococcus Aureus Antigen (No. 49).—Marketed in 20 Cc. vials, each cubic centimeter containing 3,000 million killed staphylococcus aureus, preserved with cresol.

GONOCOCCUS VACCINE (See New and Nonofficial Remedies, 1921, p. 300).

Persson Laboratories, Mount Clemens, Mich.

Gonococcus Antigen (No. 47).—Marketed in 20 Cc. vials, each cubic centimeter containing 3,000 million killed gonococci, preserved with cresol.

STREPTOCOCCUS VACCINE (See New and Nonofficial Remedies, 1921, p. 309).

Persson Laboratories, Mount Clemens, Mich.

Streptococcus Antigen (No. 48).—Marketed in 20 Cc. vials, each cubic centimeter containing 1,000 million killed streptococci, preserved with cresol.

PNEUMOCOCCUS VACCINE (See New and Nonofficial Remedies, 1921, p. 304).

Persson Laboratories, Mount Clemens, Mich.

Pneumonia Vaccine (No. 36).—Marketed in 30 Cc. vials, each cubic centimeter containing 8,000 killed pneumococci to Types I, II, III and Group IV in equal proportions.

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SATURDAY, FEBRUARY 25, 1922

REPAIR OF PERIPHERAL NERVES

With the publication of the observations of Miller [1] and Malone,[2] the rationale of the surgical treatment of injuries to peripheral nerves seems to be complete. Miller correlates the microscopic changes in the process of nerve regeneration with the gross changes and with the restoration of the tensile strength of the nerve at the point of suture, showing that, at the end of the fourth week, physical and physiologic healing alike are complete. Malone shows the practical application of the laws of reflex action to the determination of the presence or absence of conducting neurons at any point in the course of the regenerating nerve distal to the line of suture, demonstrating that the fact of physiologic healing in any sensory or mixed nerve may be proved by the elicitation of reflex respiratory stimulation on the application of a threshold stimulus at any point on the nerve trunk distal to the line of suture to or beyond which the axons have penetrated.

For many years it has been admitted that the first steps in the regeneration of the peripheral nerves following section appeared as the proliferation of the nuclei of the neurilemma, with the formation of protoplasmic bands in the proximal and the peripheral segments of the divided nerve; but whether the neuraxis was of central origin or whether it might be formed complete in the peripheral segment and await only union with a similar element in the proximal segment to become a fully functioning nerve tract offered a field for debate. In 1912, Ranson [3] convincingly demonstrated the origin of the protoplasmic bands from the proliferation and growth of the cells of the neurilemma and the bridging of the suture line in a divided nerve by them. He further showed that the new axis cylinders appear on the eighth day as side branches above the zone of degeneration in the proximal stump, and travel distad across the gap and down the peripheral stump guided by the protoplasmic bands. Kirk and Lewis [4] observed similar phenomena after tubulizing with fascia a gap formed by the removal of a 10 mm. (⅜ inch) segment of the sciatic nerve in dogs. They demonstrated that the protoplasmic bands which form bridge the gap within six days, and that the regenerated neuraxes from the proximal stump penetrate the distal segment within three weeks.

Huber, in 1919, called attention to the importance of the anatomic structure of the nerve trunk and to the nerve pattern. The nerve trunk he likened to a conduit system, each tube of the system leading to some definite point. In the regeneration of nerve fibers, the protoplasmic bands, supported by the endoneurium, are comparable to the empty tubes of such a conduit system, some leading to motor end-plates, some to sensory end-organs. If the distal segment of the nerve were rotated so that the patterns of the distal and proximal segments no longer coincided, then motor nerves might find their way down sensory pathways, and sensory nerves might find their way to motor organs and thus be as effectually lost as though they had never been regenerated. The demonstration that individual nerve fibers may not always occupy the same relative position in the nerve trunk but may interweave with other fibers to a certain extent need not deprive the nerve pattern idea of significance from the practical standpoint, although the longer the segment to be replaced, the more unlikely it appears that the proximal and distal nerve patterns in the unrotated segments would coincide. Also, the importance of the conception of the protoplasmic bands in the rôle of a conduit system remains unshaken.

Clinically, the advances in the technic of nerve suture have been so great as to render obsolete most of the time-honored methods of nerve grafting and of tubulization of nerve defects by fascia, formalized veins and other ingenious but highly uncertain artifices. Today, with very few exceptions, defects in nerve trunks may be repaired by direct end-to-end suture with reasonably bright prospects of success. This has been made possible by the development of five aids to the approximation of the ends of a divided nerve. Briefly, these methods are: (1) Mobilization of the nerve by open dissection for considerable distances above and below the point of suture; much more may be gained in this manner than by stretching the nerve without first dissecting it free. (2) Adduction or extension of limbs, as may be indicated in order to relax the nerve trunk. (3) Flexion of joints, as the elbow and wrist in lesions of the nerve trunks of the forearm. (4) Transposition of nerve trunks to shorter routes. (5) A two-stage operation; at the first sitting, the fibrous ends of the divided nerve are approximated as closely as possible, by means of the proper application of the four devices mentioned above, and sutured. During the succeeding weeks the nerve is stretched by permitting gradual extension and abduction of the limbs so that at the second sitting it may be possible to obtain direct

1. Miller, E. W.: Nerve Suture, Arch. Surg. **2**: 167 (Jan.) 1921.
2. Malone, G. Y.: A Method of Determining the Early Regeneration of Nerve Fibers at Operation, Arch. Surg. **3**: 634 (Nov.) 1921.
3. Ranson, S. W.: Degeneration and Regeneration of Nerve Fibers, J. Comp. Neurol. **22**: 487, 1912.
4. Kirk and Lewis: Regeneration of Peripheral Nerves, Bull. Johns Hopkins Hosp. **28**: 71 (Feb.) 1917.

approximation of the nerve segments after proper excision of the impervious fibrous end-bulbs. Naffziger [5] estimates that by the proper combination of methods, gaps of 10 cm. (4 inches) or more in the chief nerve trunks of the extremities may be successfully bridged and end-to-end suture obtained.

THE HEMOTOXINS OF ANIMAL PARASITES

The parasitic invaders of the human organism are not all of microscopic proportions. Besides bacteria and the protozoa, a variety of types of worms find lodgment in the alimentary canal and also in various tissues of the body. Some of them travel without much regard for the natural barriers of the different organs, and in penetrating from one part into another they may produce damage by purely mechanical means. Aside from this obvious harm it is more than likely that many if not all of the commoner animal parasites add the menace of toxic products to the injuries—the bites, lacerations of mucosae, obstructions of ducts and vessels and other mechanical disturbances—which they create.

The evidence for the production of harmful compounds by familiar animal parasites is at least twofold. The hosts frequently develop "immunity" reactions of a type commonly elicited only by chemical substances. The serologic reactions to the secretions of parasitic worms have not yet been extensively studied; but the evidence already at hand, and likewise the eosinophilia so characteristic of the infestation with certain worms, point directly to the development of humoral immunity in some cases. Furthermore, "poisons" have actually been separated from animal parasites, so that the possibility of a discharge of toxic agents within the body is rendered more likely. Nearly a quarter of a century ago, Schauman and Tallqvist [6] reported the discovery of a blood toxin in the broad tapeworm of man (*Diphyllobothrium latum*). A recent writer has remarked that although this announcement did not arouse the same degree of activity in parasitology that Ehrlich's simultaneous discovery of the toxin of *Bacillus tetani* did in bacteriology, the results of Schauman and Tallqvist's investigations were not without influence on subsequent researches in parasitology, the influence being especially marked in connection with studies on the causes of the anemia that occurs in cases of infestation with hookworms.

Hemolysins have long been prominent as probable products of animal parasites chemically detrimental to man. Schwartz [7] of the Bureau of Animal Industry, who has reinvestigated the subject of hemotoxins from parasitic worms, has shown that hemagglutinins and anticoagulins may be associated with the hemolysins that stand out as of prime importance and have been charged with the production of various types of anemia attending parasitic invasions of man. Some of these hemolysins appear to be quite thermostable; others, including hookworm derivatives, are less resistant to heat. The hemolysins from parasitic worms are not uniquely specific. Normal serum seems to inhibit their action.

The fact that some of the hemolysins, such as that of the hookworm, are not easily extracted from the parasites harboring them has raised the question whether, in truth, they are ordinarily liberated from the bodies of the latter and actually enter the circulation of the host. Thus, Blanchard [8] has doubted the etiologic significance of these toxic substances because of the possibility that they are either not liberated by the worms or, if liberated, may be thrown out of the body before they can injuriously affect the host. There is the further possibility that the hemotoxic components are not liberated until the worms sicken, degenerate or disintegrate. Schwartz has thrown the weight of his experience in favor of the view that toxic substances from parasitic worms are of etiologic significance in parasitic diseases. Hence they deserve careful consideration in further studies of the etiology and therapy of conditions in which animal parasites may be in some way concerned.

DIABETIC LIPEMIA

In a chapter entitled "What Every Diabetic Patient Should Know," Joslin [9] has described diabetes as a disease in which the patient fails to get the full benefit of the carbohydrate (starch and sugar) eaten. In some cases, he adds, there is difficulty in the assimilation of protein and fat. The physician long ago grasped the significance of this defect in carbohydrate metabolism. For many years the appearance of sugar in the urine served as an index of the abnormality. Subsequently, thanks to the development of suitable methods for the estimation of sugar in small specimens of blood, the study of the glucose content in the circulating fluids of the body and its variations in response to diet has furnished even more accurate information regarding the carbohydrate-assimilating functions of the patient. There has also come to be a growing realization that proteins may become potential sources of sugar in the metabolism, so that the extent of breakdown of these nitrogenous foodstuffs cannot be regarded with indifference when the ability of the organism to utilize carbohydrate is taxed beyond its capacities, owing to the existence of a pathologic state.

The inadequacy of the fat metabolism in many cases of diabetes has found less prompt recognition. Fat is,

5. Naffziger, H. C.: Methods to Secure End-to-End Suture of Peripheral Nerves, Surg. Gynec. & Obst. **32**: 193 (March) 1921.
6. Schauman, O., and Tallqvist, T. W.: Ueber die blutkörperchenauflösenden Eigenschaften des breiten Bandwurms, Deutsch. med. Wchnschr. **24**: 312, 1898.
7. Schwartz, B.: Hemotoxins from Parasitic Worms, J. Agric. Res. **22**: 379 (Nov. 19) 1921.
8. Blanchard, R.: Substances toxiques produites par les parasites animaux, Arch. de parasitol. **10**: 84, 1905.
9. Joslin, E. P.: Treatment of Diabetes Mellitus, Philadelphia, Lea and Febiger, 1917, p. 470.

of course, primarily involved in the dreaded "acidosis"; and although it becomes one of the few remaining sources of nutriment to an organism deprived of the advantage of the most prominent food supply, namely, carbohydrates, in the usual every day diet of normal persons, it has well been said that "fat at one time may save the life of the diabetic, but at another period may destroy it." [9] Only recently, Blatherwick [10] has substantiated the assertions of Newburgh and Marsh [11] that many patients with mild and moderate diabetes are apparently able to utilize satisfactorily large amounts of fat, as indicated by constancy of the blood fat level and by the absence of acetone bodies in the urine. It remains to be learned, Blatherwick adds, whether or not such high fat diets, continued for a considerable period, will prove to be an overstrain on the fat-burning mechanism.

One reason why the disturbances in the behavior of fat have not been appreciated more readily lies in the lack of readily detected symptoms. Unburned fat does not "overflow" into the urine as does sugar in hyperglycemia so that it can easily be detected by chemical tests. Nevertheless, the fact that marked and persistent lipemia may occur under the older forms of treatment of diabetes with carbohydrate-poor diets rich in fat has long been known, the condition being recognizable in a crude way by the milky appearance of the blood plasma. This is merely a visible sign of some disturbance of fat metabolism. In the case of hyperglycemia and the associated glycosuria, the phenomenon is generally attributed to failure in the utilization of the carbohydrate rather than primarily to overproduction. Bloor [12] has attempted to ascertain in the case of diabetic lipemia to what factor the disturbance of balance between "inflow" and "outflow" of fat in the blood is attributable. According to him, the fat which produces the lipemia may be of endogenous or exogenous origin or both, but the phenomena of the lipemia are the same in either case. Bloor has ascertained that, in lipemia of whatever origin, all three blood lipoids (fat, lecithin and cholesterol) are increased, fat generally showing the greatest ultimate increase, and cholesterol next. He regards it as probable that they have to do with the metabolism of the fat, since whenever the fat of the blood is increased they are also increased, and, conversely, when the fat of the blood is low they also are low. Bloor suggests that the appearance of persistent lipemia is physiologically equivalent to the appearance of sugar in the urine, the abnormality in either case being attributable, perhaps, to the lack of some suitable hormone concerned with the metabolism of the respective foodstuff. More specifically, he assumes that the cause of the lipemia of diabetes is to be sought primarily in a diminished power to remove fat from the blood, referable to an inadequate supply of the pancreatic hormone, and secondarily to a temporary disablement of the fat-burning mechanism due to overwork, which is recovered from rather slowly.

10. Blatherwick, N. R.: Observations on Blood Fat in Diabetes, J. Biol. Chem. **49**: 193 (Nov.) 1921.
11. Newburgh, L. H., and Marsh, P. L.: Use of a High Fat Diet in Treatment of Diabetes Mellitus, Arch. Int. Med. **28**: 647 (Dec.) 1920.
12. Bloor, W. R.: Lipemia, J. Biol. Chem. **49**: 201 (Nov.) 1921.

THE PURPOSE OF THE GALLBLADDER

The explanation for the existence of the gallbladder has aroused as much discussion as the futility of the appendix or the utility of the thymus. The value of the gallbladder as a lucrative stone quarry for the artisan surgeon is admitted by all; but when the triumphant operator has removed it, life and gall seem to flow on as if the offending member had never had any function but that of lithogenesis. Comparative anatomy, which helps to clear up so many puzzles, here only serves to baffle, for some animals are entirely devoid of a gallbladder, and yet thrive apparently as well as those more liberally endowed. Thus, McMaster [1] relates that among the higher animals it is present in the cow and sheep, while it is absent in the horse, present in the goat, and absent in the closely related deer, and is to be found in the hog and wild boar but not in the peccary of South America. Among birds, the hawk and owl possess it, while doves do not; and among the rodents the mouse is found with the organ, the rat without. One species of gopher, the pocket gopher, is without a gallbladder, while another, the striped gopher, possesses it. Woods Hutchinson is authority for the statement that in the giraffe it is at times present and again not.

Careful studies in the Rockefeller Institute [2] have indicated clearly enough that when there is a gallbladder it works as vigorously as if it had a purpose in life, concentrating at a remarkable rate the bile that reaches it, for the mere passage of bile through the gallbladder from the cystic duct was found to concentrate it from two to four times, while the bile that enters the intact gallbladder may be concentrated ten times in twenty-four hours. Such power of concentration makes it possible for the gallbladder to serve as a storage place for bile despite its relatively small capacity, although at the same time the concentration favors the precipitation of the least soluble component of the bile, the cholesterol, and undoubtedly this explains the frequency of gallstones. On the other hand, the demonstration of this concentrating ability of the gallbladder fails to explain its functional value entirely, since we have before us the apparent good health of those who have been robbed of this organ, and the manifest good health of those species of animals that have no gallbladder. Certainly it cannot be a matter of different needs because of dietary differences, when the mouse has a gallbladder (and gallstones too) and the rat gets along so well without either.

1. McMaster, P. D.: J. Exper. Med. **35**: 127 (Feb.) 1922.
2. Rous, Peyton, and McMaster, P. D.: J. Exper. Med. **34**: 47, 75 (July) 1921.

There is the possibility that when there is no gallbladder the ducts take over its storage and concentrating function, since it is known by surgeons that after cholecystectomy the bile ducts become dilated. McMaster has put this hypothesis to the test by comparing the behavior of the ducts in mice, which have a gallbladder, and in rats, which have none, but finds that the ducts of the rat do not exhibit any power of concentrating bile such as is possessed by the gallbladders in other species. On the other hand, it was found that the bile as secreted by the liver of the rat is about eight times as concentrated as mouse bile, at least as far as pigment content goes, suggesting that the rat does not have a gallbladder since it has no need of concentrating its bile. Whether the same difference in concentration will be found universally between animals with and without gallbladders remains to be seen. Certainly it does not apply to the human subject, whose gallbladder does have active concentrating powers, and without which the bile ducts become distended to a degree that is far from normal, and possibly capable of injury to the hepatic tissues even if this injury is not clinically obvious. Furthermore, instead of the normal relation of bile discharge to the stage of digestion, after cholecystectomy a great difference is observed. Bile dribbles continuously from the ampulla of Vater, and during fasting may fill the duodenum and be voided as such in the stools. The disturbance of function thus indicated is not without a bad effect on the digestive processes, masked though this usually is. Rost applies the term "biliary incontinence" to the continuous escape of secretion into the intestine after removal of the gallbladder. The incontinence is associated with an abnormal relaxation of the sphincter; the latter, however, frequently recovers its tone as duct dilatation ensues. As Rous and McMaster say, the fact that few ills follow on removal of the normal gallbladder means merely that the body has adapted itself to the loss, not that the loss is unimportant. In this connection the surgeon would do well to remember that uncertainty as to function and confidence in readjustment are at best questionable motives for adventures in ablation.

SHOCK AS A RESULT OF TOXEMIA

During the World War the subject of shock early assumed a place of unusual prominence in connection with the surgical problems presented by the injured. The topic was in no sense a new one, for the genesis of surgical shock had already been debated many times and had given rise to a variety of more or less conflicting and inconclusive speculations in medical literature. These earlier hypotheses, as well as more recent ones, were earnestly discussed by physiologists and surgeons in the eventful days of supreme military activity, in the hope of discovering some tenable solution of the cause of shock and of providing some rational procedure for the relief of its threatening symptoms. The history of these efforts has repeatedly been discussed in THE JOURNAL, particularly at the time when the need of more knowledge was greatest.

Cannon[1] has recently summarized the best known features of wound shock as characterized by a low venous pressure; a low or falling arterial pressure; a rapid, thready pulse; a diminished blood volume; a normal or increased erythrocyte count and hemoglobin percentage in peripheral blood; a leukocytosis; an increased blood nitrogen; a reduced blood alkali content; a lowered metabolism; a subnormal temperature; a cold skin, moist with sweat; a pallid or grayish or slightly cyanotic appearance; thirst; rapid respiration; often, vomiting and restlessness; and anxiety, changing to mental dulness and lessened sensitivity. Many of these features, he adds, may appear at once or as soon after the reception of the wound as the observations can be made; or they may develop only after the lapse of several hours. At one time it was urged that the widespread effect in the organism induced by severe trauma might be due to nervous impulses. Numerous investigations, however, have made such a theory untenable. It matters little for the outcome of the trauma whether the injured parts are denervated or not; in truth, there is no clearly demonstrable essential relation between the production of shock and an excessive stimulation of the central nervous system. Equally true is the now recognized fact that the low blood pressure initiated by severe injury is not primarily due to a loss of vasomotor tone or any comparable sort of exhaustion. As Cannon has convincingly pointed out anew, if the low blood pressure resulting from local trauma is not due to loss of blood into the injured region, or to reflex vasodilation, or to depression or exhaustion of the vasoconstrictor center, or to fat emboli, or to acapnia, the connection between the local damage and the general bodily state may reasonably be looked for in the remaining great connecting system—the circulation.

In harmony with this conclusion there has arisen a theory of a toxemic cause of wound shock, based on evidence for the existence of a toxic factor liberated in the injured tissues. Striking analogies between the physiologic effects of certain occasional tissue components and the phenomena of surgical shock have been presented by Dale[2] and his associates in England. Poisonous protein derivatives, products of partial digestion, of bacterial action and tissue manipulation readily produce fall of blood pressure attended with a series of changes in which "dilation of the capillaries and pooling of blood within them, poisoning of their endothelial walls so that they are abnormally perme-

1. Cannon, W. B.: Studies in Experimental Traumatic Shock, IV, Evidence of a Toxic Factor in Wound Shock, Arch. Surg. 4:1 (Jan.) 1922.

2. Dale and Laidlaw: Memorandum upon Surgical Shock and Some Allied Conditions, English Medical Research Committee, February, 1917. Dale, Laidlaw and Richards: Traumatic Toxemia, English Medical Research Committee, Report Series 26, March, 1919, p. 9.

able, escape of plasma through these walls into the tissue spaces, and consequent concentration of the corpuscles are the main features." Championing the importance of these features characteristic also of traumatic shock, Cannon has presented a convincing review of clinical as well as purely experimental evidence for traumatic toxemia, citing in particular the notable contributions of the French surgeon Quénu.[3] They show, among other interesting observations, that anything which delays or checks absorption from the injured region delays the development of shock; but if there is a sudden removal of the check, serious results follow.

If shock is actually the outcome of an intoxication, presumably by protein derivatives set free from areas of tissue destruction, some of the manifestations of severe burns become more easy of interpretation. As Cannon concludes, in harmony with other experts in this field, the present conception seems to be that not only the shock following burns, but also the delayed shock consequent on severe trauma, is properly placed in the same category with other forms of general depression of bodily functions and defective circulation due to the setting free of toxic material in the body.

Current Comment

THE EARLIEST MAN AND THE LATEST DISEASE

The newest contribution to the history of human evolution, the Rhodesian skull,[4] seems to be one of the most important finds yet made. It was obtained in a mine in southern Rhodesia along with some other human bones and very crude flint and quartz instruments; and, although in some features the most primitive of early human skulls, in others it has many points of resemblance to or even identity with the skull of modern man. The supra-orbital region is massive and gorilla-like, and the cranium is very flat on top; but the posterior portion is so large that the total capacity is about as great as that of a recent human skull. On the other hand, the massive muscle attachment ridges are of the most primitive type. The palate is well arched, there is great length of face, and the wisdom tooth is reduced in size as in modern man, a feature not found in other fossil skulls. In contrast to the Neanderthal man, who is supposed to have walked in a crouching position because of his curved femur, the Rhodesian man had a straight leg, wherefore it has been stated that this specimen represents the direct ancestors of modern man, the Neanderthal man representing a branching off from the main ancestral tree. For the medical man this new specimen has one particularly interesting feature, the presence of unmistakable evidence of dental caries and even of abscesses at the roots of the teeth. In discussing the subject of paleopathology, a few weeks ago,[5] we commented on the fact that in ancient Egypt dental disease and arthritis deformans were even more prevalent than they are now. The Egyptian mummies are chronologically recent, as compared with the Rhodesian man. There surely can be little justification in attributing dental caries and alveolar abscesses to modern civilization, overcooked foods or too much candy, in view of the testimony of our earliest known ancestor.

THE VITAL CAPACITY IN HEART DISEASE

The study of vital capacity, that is, the total quantity of air which can be made to leave the lungs when a maximal inspiration is followed by a maximal expiration, has engrossed the attention of clinicians in increasing measure for several years. There are a number of conditions in which the loss of respiratory accommodation in the patients can well be understood. In pulmonary emphysema, for example, a diminution in vital capacity may arise, so that this factor, together with the relatively imperfect mixture of the respired air with that in the alveolar spaces, is liable to bring about suffering from respiratory insufficiency whenever there is an increased demand for gaseous interchange in the lungs. In other cases the presence of exudates in the alveoli and finer bronchi, or the collapse of the lungs from outside pressure or consolidation of parts of these organs, occasions a reduction in vital capacity. There are patients with cardiac disease, however, in whom the vital capacity is demonstrably reduced by one third or more of its usual value, although such physical signs as pulmonary edema, pleural effusion, hepatic enlargement and similar factors sufficient to account for the degree of decrease observed are entirely wanting. Such cases have often proved to be a puzzle from the standpoint of scientific interpretation. Recent experiments conducted by Drinker, Peabody and Blumgart[6] at the Medical School of Harvard University offer a possible clue to an explanation. They have shown that intravascular blood, as well as edema and similar mechanical factors, can encroach markedly on the pulmonary air space. Thus, when a high degree of pulmonary stasis was brought about by obstruction to the pulmonary veins, changes in ventilation due to decrease in the vital capacity ensued. That the effect on pulmonary ventilation in such cases was the result of vascular change alone is indicated by the fact that release of pressure on the veins resulted in a virtually complete return to the previous normal conditions. In other words, the experiments show that if the pulmonary veins are obstructed to such a degree that congestion of the pulmonary vessels without exudation is produced, there results interference with the entrance of air into the lungs, which is relieved as soon as the obstruction is removed; but that, if the circulatory conditions are such that exudation of fluid out of the vessels into tissues and air passages is produced, a permanent inter-

3. Quénu: Rev. de chir. **56**: 204, 1918.
4. Science **55**: 129 (Feb. 3) 1922.
5. Paleopathology, editorial, J. A. M. A. **78**: 282 (Jan. 28) 1922.
6. Drinker, C. K.; Peabody, F. W., and Blumgart, H. L.: The Effect of Pulmonary Congestion on the Ventilation of the Lungs, J. Exper. Med. **35**: 77 (Jan.) 1922.

ference with the entrance of air into the lungs results. Clinical analogies to the experimental conditions just recorded are found in mitral stenosis. The Boston investigators remind us that the inability to breathe deeply, and the low vital capacity which is one of its outstanding features in early stages of this cardiac defect, may well be explained by engorgement of the pulmonary vessels and lung rigidity, just as these factors explained the interference with the entrance of air into the lungs in their experiments. At a later stage of mitral stenosis, physical examination reveals râles in the air passages and fluid in the pleural cavities.

Association News

THE ST. LOUIS SESSION

Authorization of Special Railroad Fares by Various Passenger Associations

The New England Passenger Association has authorized the sale of special rate round-trip tickets from points within its territory to St. Louis. These tickets are to be sold on presentation of identification certificates and at the price of a fare and one-half. Similar authorization has been issued, as previously announced, by the Trunk Line Association, the Central Passenger Association, the Southeastern Passenger Association, the Southwestern Passenger Association and the Western Passenger Association. The combined territories of these associations include practically all the continental area of the United States east of the Rocky Mountains.

The identification certificates are now available. Members may secure these certificates by writing to the Secretary of the American Medical Association, 535 North Dearborn Street, Chicago, and enclosing a self-addressed, stamped envelop.

The Scientific Exhibit

The scientific exhibit at the St. Louis session will be located on the auditorium floor of the Moolah Temple, Lindell Boulevard near Vandeventer Street. The entire scientific exhibit will be on one floor. The various booths and spaces for individual exhibitors, organizations, colleges, etc., will occupy one half of the floor of the auditorium and the entire stage. The moving picture theater will be located in the hall just off of the large auditorium. Ample space for both floor and wall exhibits has been provided. Application blanks are now being printed and will be sent out to all those interested. A program of educational talks and demonstrations from lantern slides and moving pictures is being prepared and will occupy about half of the moving picture program, the other half of the time being devoted to individual exhibitors. Any Fellow desiring either wall or floor space in the scientific exhibit or time in the moving picture theater, for presenting and demonstrating scientific material, is requested to write the Director of the Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois, stating the nature of his exhibit and the amount of space or time desired. Application blanks and further details will be sent on request.

Mental Hygiene is Individualization.—Mental hygiene means individualization above everything. It aims to give free play to the development of the personality. This does not mean that each individual is to have his own way without regard to others. On the contrary, free play of personality for all promotes harmony and smooth action, for the well adjusted individual knows how to get on in his environment. The conflicts and distresses that arise among individuals can usually be traced to personality defects.—M. C. Jarrett, *Hospital Social Service* **36**:364 (May) 1921.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. Augustus D. Matthews, Aariton, was elected president of the Dale County Medical Society, at the recent meeting held at Ozark, and Dr. Malcolm O. Grace, Ozark, was elected secretary-treasurer.

Medical Association Enlarged.—At a recent meeting of the Lauderdale County Medical Association, it was decided to enlarge the society by including the adjacent counties of Kemper, Winston, Newton, Neshoba, Clarke and Jasper with the present organization.

Lack of Accommodations for Tuberculous Patients.—It has been announced by the Jefferson County Antituberculosis Association that the Red Mountain Tuberculosis Camp has a capacity for forty patients, and that 360 who are financially unable to go to private sanatoriums are awaiting treatment. Only $8,000 was realized through the sale of Christmas seals, and voluntary contributions are being solicited.

DISTRICT OF COLUMBIA

Appropriation for New Hospitals—Chairman Langley, of the house, public buildings and grounds committee, announced, February 13, that President Harding has approved the appropriation of $16,000,000 for the construction of additional hospitals for disabled ex-service men. Passage is advocated by the federal board of hospitalization also.

ILLINOIS

Personal.—Dr. Clarence A. Earle, Des Plaines, recently resigned from the position of district health superintendent of the state department of public health and has been succeeded in that capacity by Dr. George A. Klein, Chicago.

Champaign County Medical Society.—At the annual meeting of the society held recently, Dr. David E. Yantis was elected president; Dr. James F. Hilgenberg, Pesotum, vice president, and Dr. Lemuel L. Gregory, Urbana, secretary-treasurer.

Peoria City Medical Society.—At the annual meeting of the society, held recently, the following officers were elected for 1922: Dr. Charles G. Farnum, president; Dr. William B. Eicher, first vice president; Dr. Otto W. Simpson, second vice president, and Dr. Sidney H. Easton, secretary-treasurer.

Ophthalmic Survey.—Dr. Russell W. Raynor, U. S. Public Health Service, has been assigned for duty with the Illinois State Department of Health to make a survey in the southern sections of the state of a contagious infection of the eyes, which is prevalent there. Dr. Raynor has been in charge of the government trachoma hospital in Pikesville, Ky., for a number of years.

Epidemic in Rantoul.—A mild epidemic of scarlet fever recently developed at the flying field near Rantoul where more than 100 persons fell victims to the disease. The situation has resulted in the establishment of regular medical inspection of schoolchildren in Rantoul so that greater preventive protection is now afforded them against this as well as all other communicable diseases.

Public Health Advisers to Meet at Cairo.—The next regular meeting of the Illinois Board of Public Health Advisers will be held at Cairo on Saturday, March 4. The program includes a conference during the morning, a luncheon with the chamber of commerce at noon, meetings with the southern Illinois health officers and women's club representatives in the afternoon and an evening session with the Alexander County Medical Society. A meeting each for both Carbondale and Murphysboro has been scheduled for the evening. All members of the advisory board will attend the morning meetings while one or more will be present and will speak at each of the afternoon and evening meetings.

Chicago

The Robert Koch Society.—At the joint meeting of the Robert Koch Society for the Study of Tuberculosis and the

Chicago Medical Society held, February 22, in Chicago, Dr. Paul A. Lewis delivered an address on "Relation of Heredity to Tuberculosis."

INDIANA

Help for Student Nurses.—At the meeting of the City Hospital Nurses' Alumnae Association it was decided to establish a loan fund for student nurses at the City Hospital, Indianapolis, which will be known as the "Mother Bryce Fund" in memory of Mrs. Peter F. Bryce, for the benefit of prospective students who are prevented by lack of money from taking up the study of nursing as soon as they have finished high school.

Hospital News.—Plans and specifications have been approved for a new modern county tuberculosis sanatorium in five units to be erected near Crown Point at a cost of $350,000. ——A campaign has been started to raise $350,000, for the erection of a 100-room wing, contagious department, and a nurses' training school at St. Elizabeth's Hospital, Lafayette. ——A bond issue of $150,000 for the construction of additional hospital facilities at the Marion County Hospital for the Insane, Julietta, has been arranged.——Contracts have been awarded for the construction of twelve buildings to constitute the female colony of the Indiana Village for Epileptics, at a cost of $300,177. These buildings are expected to be ready for occupancy early in the fall.——A ward for colored patients will be added to the Byron Hospital, Fort Wayne.

IOWA

Personal.—Dr. Ora Frank Parish has been appointed surgeon for the Rock Island Railroad, between Brooklyn and Newton.——Dr. John H. Peck, Des Moines, was elected Iowa representative of the Iowa Tuberculosis Association at a recent meeting and Dr. Roscoe P. Carney, Davenport, director of Scott County.

Physician to Serve Second Sentence.—It is reported that Dr. William A. Benadom, Davenport, who was released from the federal prison at Leavenworth, Kan., where he has served more than nine months on conviction of violation of the Harrison Narcotic Law, was rearrested, February 14, by the sheriff on a previous conviction to serve one year in Scott County Jail, Davenport, for resisting an officer of the law.

KANSAS

Personal.—It is reported that Dr. Lucullus R. Sellers has offered his resignation as superintendent of the Larned State Hospital, April 1.——Dr. H. Gerald Shelly, Mulvane, was elected president of the Sumner County Medical Society, recently.

KENTUCKY

Personal.—Dr. David Y. Ragan, Coal Spring, has been appointed county district physician.

LOUISIANA

Hospital News.—It has been announced by Albert B. Dinwiddie, Ph.D., president of the Tulane University of Louisiana School of Medicine, New Orleans, that it is planned to erect a new modern hospital on the university campus at a cost of between $1,000,000 and $2,000,000. The hospital will be in connection with the medical school of the university and will be constructed along substantial lines.

Ordinance Declared Unconstitutional.—The New Orleans city ordinance providing for the detention of women infected with communicable disease in the isolation hospital was declared unconstitutional by the supreme court, February 6, when the decision of Judge Dowling in the case of Ida Johnson was upheld. This ordinance was passed in 1917 as a war measure and has been enforced since that time.

MARYLAND

Personal.—Dr. William S. Thayer has been made president of the Friends of Art Society of Baltimore.——Dr. Ira L. Fetterhoff has bought the Biedler-Sellman Sanatorium in Baltimore and, with fifteen other physicians, will operate the institution under the name of the Homewood Hospital. Dr. Fetterhoff has been in charge of the hospital since Nov. 1, 1921.——Dr. Winford H. Smith, superintendent of the Johns Hopkins Hospital, has been awarded the Distinguished Service Medal for "meritorious and conspicuous service as specialist in hospital management and construction." The presentation took place at Fort Howard, Maryland, and was made by Major-Gen. Charles J. Bagley, commander of the third army corps area.

MASSACHUSETTS

Auxiliary Tuberculosis Association.—At the meeting of the Boston Tuberculosis Association held in Boston, February 9, the Boston Tuberculosis Association Auxiliary was organized. Dr. John B. Hall was elected secretary of the society and Dr. Lloyd T. Brown delivered an address on "Tuberculosis in Children."

Memorial to First Physician.—It has been announced that a memorial in the form of a maternity ward at the Jordan Hospital, Plymouth, will be erected to Dr. Samuel Fuller, the physician who came with the Pilgrims on the Mayflower, in 1620. All physicians and surgeons and medical societies of the country will be asked to contribute toward the building fund.

Psychiatric Specialists Hold Meeting.—At a meeting held February 8, at Boston, Dr. Thomas W. Salmon, medical adviser of the National Committee for Mental Hygiene and professor of psychiatry, Columbia University College of Physicians and Surgeons, New York City; Dr. William A. White, superintendent of St. Elizabeth's Hospital, Washington, D. C.; Dr. Charles Macfie Campbell, director of the Boston Psychopathic Hospital, Medical School of Harvard University, and Dr. Haven Emerson, former commissioner of health, New York City, delivered addresses on the treatment and prevention of mental diseases and feeblemindedness.

MINNESOTA

Personal.—Dr. Palmer R. Bowditch, for several years with the Massachusetts State Board of Health, has been appointed superintendent of the Sand Beach Sanatorium, Lake Park.——Dr. Charles R. Christenson was elected president of the West Central Minnesota Medical Society at the annual meeting held recently.——Dr. William E. H. Morse has been elected president of the Rice County Medical Society.

MISSISSIPPI

Roberts Bill Postponed.—It is reported that the Senate has indefinitely postponed consideration of the Roberts bill, which seeks to repeal the special privilege tax on physicians.

NEBRASKA

Elkhorn Valley Medical Society.—At the annual meeting of the Elkhorn Valley Medical Society, held recently, Dr. William J. Davies, Fremont, was elected president; Dr. William H. Heine, Hooper, vice president, and Dr. Andrew Harvey, Fremont, secretary-treasurer. Dr. Frederick Tice, Chicago, was the principal speaker at the meeting.

NEW HAMPSHIRE

Personal.—Dr. Maurice Watson was elected president of the Manchester Board of Health at the annual meeting, held February 9.

Portsmouth Medical Society.—At the annual meeting of the society, held February 8, the following officers were elected for the ensuing year: president, Dr. George A. Tredick; treasurer, Dr. Herbert L. Taylor, and secretary, Dr. Laurence R. Hazzard.

NEW MEXICO

County Medical Meeting.—At the meeting of the Eddy County Medical Society held recently at Carlsbad, Dr. Mallory B. Culpepper, Carlsbad, was elected president and Dr. Chester Russell, Artesia, was elected secretary of the society.

NEW YORK

Personal.—Dr. Morris J. Davies of Utica has been elected president of the board of managers of the Oneida County Hospital.

Physician Awarded Carnegie Medal.—It is reported that Dr. John Albert Kelk, Brooklyn, has been awarded a bronze medal for heroism by the Carnegie Foundation, for attempting to save the life of Carl Dierker, who had fallen into the water from a capsized canoe.

Course in Infectious Diseases and Public Health.—The annual course in infectious diseases and public health given by the Albany Medical College in cooperation with the state department of health will begin, March 2, 1922. A program of the course will be mailed to any physician on request.

Hearing on Antivivisection Bill.—A hearing on the Betts bill, which would prevent experiments on living dogs, was held in Albany, February 7. This is the same bill that has been before the legislature for ten successive years. Among the advocates of the bill were Drs. Joseph D. Harrigan and Willard Carver of New York City. Drs. Simon Flexner of the Rockefeller Institute, H. B. Williams of Columbia University, and Augustus B. Wadsworth of the the state department of health opposed the bill.

Plan to Provide Rural Doctors.—At its annual convention held in Binghamton, February 10, the state grange placed itself on record as favoring the plan of Dr. Milton E. Gregg of Mottville, who proposes that each country community now without a physicin erect a home and a small hospital for the use of any physician who will settle there. Dr. Gregg told the grange that wherever a farming community erected a home, the Rockefeller Foundation would send a physician, thus providing medical service for those places in the state now without it. Dr. Gregg further states that the plan had received the approval of the state association of health officers. The state department of health and the Rockefeller Foundation will be asked to join the movement.

New York City

Academy of Medicine Increases Membership.—At its stated meeting, February 16, the New York Academy of Medicine passed an amendment to its constitution which makes provision for an increase in the resident fellowship from 1,350 to 1,400, and an increase in the nonresident fellowship to 300.

Planning for New Medical Buildings.—A committee representing the College of Physicians and Surgeons of Columbia University, consisting of Edward Harkness and William Sloane, trustees of the university, Dr. William Darrach and Dr. Clarence C. Burlingame, recently made a visit to the Medical College of the University of Cincinnati as a part of their work of gathering ideas for the proposed new buildings for the medical school at Columbia.

Begin Maternity Study.—The Maternity Center Association, at its recent annual meeting, made public the fact that it had begun a scientific study of the essentials of complete maternity care and that it is opening a new chapter in an effort to reduce the mother and baby death rate in the United States. More than a million pamphlets are being prepared for nation-wide distribution. During the past year, 8,211 patients reported to the association for care and 48,729 visits were made to the homes of patients by nurses. Patients made 23,002 visits to the twenty-five nursing centers maintained by the association.

NORTH CAROLINA

Hospital News.—The Lincoln Hospital, for negro patients, Durham, which was totally destroyed by fire, January 26, at an estimated loss of $15,000, will be rebuilt at a cost of $100,000, funds for which have already been raised.

Personal.—Dr. Albert S. Root, Raleigh, has been elected president of the Wake County Medical Society.——Dr. Roy B. McKnight has resigned from the staff of the U. S. Public Health Service Hospital, Biltmore, to accept the position of assistant professor of pharmacology at the University of North Carolina School of Medicine, beginning with the September term.——Dr. Jacob Frank Highsmith, Fayetteville, has been appointed assistant surgeon general on the staff of the commander-in-chief of the United Confederate Veterans, with the rank of colonel.——Dr. Clyde K. Hasley, radium and roentgen-ray therapy specialist in the Crowell Clinic, Charlotte, has been appointed associate professor in the University of Michigan Medical School, Ann Arbor.

OHIO

Hanna Lecture.—The fifth Hanna lecture was delivered, February 24, at the Medical Library, Cleveland, by Prof. Joseph Barcroft, F.R.S., Fellow, Kings College, Cambridge, England, on the subject of "The Physiology of Life at High Altitudes."

Unlicensed Practitioner Convicted.—It is reported that Arthur W. Marriott, Christian Science practitioner, was found guilty, January 20, in the municipal court, Cleveland, of practicing medicine without a license and was fined $100 and costs. In passing judgment, Chief Justice John P. Dempsey stated that he was bound by the ruling of the Supreme Court of Ohio in the Marble case, brought about fourteen years ago. At that time, the supreme court held that under the laws of Ohio "the practice of Christian Science treatment is the practice of medicine."

Personal.—Dr. Edmund M. Baehr, professor of psychology at the Medical College of the University of Cincinnati, who has accepted the position of head of the juvenile research bureau of the state welfare department, Columbus, was the guest of honor at a farewell dinner given by the faculty of the university, February 8. Addresses were made by Dr. Frederick C. Hicks, Ph.D., president of the university; Dr. Henry Page, dean of the medical college; Dr. Robert Ingram, and Dr. Charles A. L. Reed, former president of the American Medical Association.——Dr. James M. Lantz, Lancaster, has been appointed attending specialist to the Veterans' Bureau at Columbus, effective February 14. Dr. Lantz, during the late war, served in the M. C., U. S. Army, with the rank of captain. He will have charge of all eye, ear, nose and throat work in central Ohio.——Dr. Charles R. Kayser has been renamed county health officer for Van Wert County.

PENNSYLVANIA

Physician Fined.—It is reported that Dr. E. C. Watson, Cambridge Springs, who entered plea of nolle contendere, when arrested recently for the violation of the Harrison Narcotic Law, was fined $100 and costs by Judge Prather at Meadville.

State Guards Against Smallpox.—Officers of the state department of health have vaccinated members of the engineering and laboratory forces of the state government because of the appearance of smallpox in New Cumberland, near the residences of several attachés of the engineering branches.

Hospital News.—The board of trustees of the Odd Fellows' Orphans' Home, Ben Avon, have purchased a site on the north side and a new home will be erected at a cost of $250,000.——The Catholic Diocese of Erie will construct an orphans' home at Meadville.——A new county tuberculosis hospital will be erected at Wilkes-Barre.

State Welfare Conference.—At the Pennsylvania Welfare Conference held in York, February 10, Dr. S. F. Janney Stoddard of Philadelphia was elected president. Dr. William C. Sandy, chief of the bureau of mental health of the state welfare department, urged the establishment of mental clinics in all hospitals and similar institutions that receive state aid.

Health Commissioner Retrenchment Program.—Dr. Edward Martin, commissioner of health, February 10, announced the dismissal of twenty-two clerks from the division of medical inspection of his department as part of the program of reduction of force and expenses determined on last fall. The appropriations available for medical inspection of schools will not permit extended work and only "follow up" supervision will be carried out this year.

Personal.—Dr. Charles H. Crampton, Harrisburg, has been appointed lecturer in the genito-urinary division of the state health department. Dr. Crampton, who is vice president of the National Medical Association, an organization of colored physicians, will deliver lectures throughout the state before colored physicians and state bodies.——Dr. Daniel E. Sable has been appointed fire and police surgeon for Pittsburgh to succeed Dr. Philip Kamin, who resigned recently. Dr. Sable held this position from 1913 to 1917, when he served as major in the M. C., U. S. Army.——At a recent meeting of the board of directors of the Williamsport Hospital, Dr. James Gibson Logue was elected to the staff. He will serve on the children's ward and the contagious ward. He will alternate every six months with Dr. Robert K. Rewalt.

Industrial Physicians and Surgeons of Pennsylvania.—The fourteenth annual conference of industrial physicians and surgeons of Pennsylvania was held, February 10, in Philadelphia. Dr. Francis D. Patterson, chief of the division of industrial hygiene and engineering of the Pennsylvania department of labor and industry, was chairman. Visiting physicians who gave addresses were: Dr. Hugh S. Cumming, U. S. Public Health Service; Dr. Henry Field Smyth, assistant professor of industrial hygiene, University of Pennsylvania; Dr. Elizabeth B. Bricker, medical director, Pennsylvania department of labor and industry; Dr. Arthur B. Emmons, director of mercantile health work, at the Medical School of Harvard University, Boston, and Dr. S. Dana Hubbard, superintendent of industrial hygiene, New York City department of health.

Philadelphia

Personal.—The director of the department of public health has announced the appointment of Dr. Joseph C. Doane as medical director and superintendent of the Bureau of Hospitals and of the Philadelphia General Hospital.——Dr. James

M. Anders has been reelected president of the Pennsylvania Tuberculosis Society.——Dr. H. L. Lynah of New York City addressed the section on otology and laryngology of the College of Physicians of Philadelphia, February 15, his subject being "Some Difficult Cases of Chronic Laryngeal Stenosis."

College of Pharmacy and Science.—The Founders' Day exercises were held at the Philadelphia College of Pharmacy and Science, February 23, in the College Auditorium, under the presidency of Dr. William C. Braisted. Dr. Judson Daland, professor of medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia, gave an address on "Professional Ethics." Award of honorary membership was announced to the following scientific workers: Dr. E. Poulsson, Christiania, Norway, professor of pharmacology and chairman of the pharmacopeial commission of Norway; Dr. L. Van Itallie, University of Leyden, Holland, chairman of committee of revision of the Dutch Pharmacopeia; Sir Nestor Tirard, London, England, secretary of the pharmacopeial committee of the General Medical Council of Great Britain; Dr. J. Bougault, professor of galenical pharmacy, L'Ecole Supérieure de Pharmacie, Paris, France, and Sir William Glyn Jones, M. P., London, England, secretary of the pharmaceutical society of Great Britain.

RHODE ISLAND

Hospital News.—At the annual meeting of the board of hospital commissioners, held in January at Providence, Dr. Dennett L. Richardson was reelected superintendent of the institution, and Dr. Harmon P. B. Jordan was elected assistant superintendent.

County Medical Meeting.—At the annual meeting of the Washington County Medical Society, held in January, the following officers were elected for 1922: president, Dr. Asa S. Briggs, Ashaway; vice presidents, Drs. John E. Ruisi, Westerly, and Francis E. Burke, Wakefield, and secretary-treasurer, Dr. William A. Hillard, Westerly.

SOUTH CAROLINA

Hospital News.—The Thompson memorial building of the Roper Hospital, Charleston, has been completed, and will be known as the Riverside Infirmary. The old building will be remodeled and used as a nurses' home.——Dr. Robert C. Bruce has been elected president of the Greenville City Hospital staff for 1922.——Dr. Claude C. Gambrell has been elected to the board of managers of the Abbeville Memorial Hospital, Abbeville.

TEXAS

Physicians Sue Prohibition Director.—It is reported that Drs. John M. Boyd, Claude V. White, Arthur R. Matthews and A. L. Shackelford have sued the state federal prohibition director for $10,000 damages alleging that they were subjected to "shameful humiliation and disgrace" in the eyes of both their patients and their fellow physicians on his refusal to renew permits for the plaintiffs to prescribe alcohol for their patients.

Hospital News.—The contract has been let and ground will be broken immediately for a new modern sanatorium in Hillsboro. The building will be two stories high and will contain twenty rooms. The hospital is the property of and will be occupied by Dr. James E. Boyd.——Fire recently completely destroyed the Physicians and Surgeons Hospital, Brownwood. The loss is estimated at $30,000.——The new addition of a baby ward at the Physicians and Surgeons Hospital, Corsicana, has been completed and is ready for occupancy.——A new city-county hospital will be erected at Ranger at a cost of $60,000.——It is announced that a hospital exclusively for drug addicts will be erected at Fort Worth.——Joint construction of a negro tuberculosis hospital at Woodlawn is planned by the city and county.

WASHINGTON

Personal.—Dr. Jacob S. Smith, Bellingham, has been appointed member of the city board of health to succeed Dr. Edward W. Stimpson, resigned.

Physicians' Credit Bureau.—A credit bureau has been incorporated for $25,000 at Seattle, comprising fifty physicians and dentists, which will be a rating bureau and bonded collection agency for the profession in that city.

King County Medical Society.—At the annual meeting held in January, the following officers were elected for the ensuing year: president, Dr. Reginald Copeland Plummer; vice president, Dr. Charlton E. Hagyard, and secretary-treasurer, Dr. Donald V. Trueblood.

PORTO RICO

Personal.—Dr. A. Martinez Alvarez of the editorial staff of the *Bulletin* of the Porto Rico Medical Association has been granted leave of absence for six months.

CANADA

Hospital News.—A county memorial hospital will be established at Brampton, Ont. At the annual meeting of the board of governors held recently, Dr. C. M. French, Brampton, was elected president.

Personal.—Dr. Clarence B. Dickson, Los Angeles, has recently been appointed supreme physician to the Independent Order of Foresters, Canada, to succeed the late Dr. Thomas Millman.——Dr. Robert J. Niddrie, Toronto, has been appointed chairman of the medical advisory council of the Independent Order of Foresters, Canada.

University News.—Although the provincial government has expressed disapproval of the financial suggestions contained in the 1921 report from the University of Toronto, it is understood that the university will make another effort to secure the adoption of its principles. Unofficial opinions have been expressed by members of the provincial government that the suggested division of one half of the provincial succession duties between the government and the university is not ideal, because of the instability of the succession duties revenue.——Replying to the Lincoln County Council's expression of disapproval against the raising of the University of Toronto's entrance requirements, Mr. W. J. Dunlop, director of extension at the University of Toronto, explained the reasons for the new standards in a recent interview. Mr. Dunlop explains that there are five different avenues for entering an Ontario university in the first year: (1) with two honor matriculation subjects, in addition to pass matriculation; (2) with pass matriculation, with 75 per cent. in any four papers; (3) with pass matriculation, including 66 per cent. in any six papers; (4) with a second-class teacher's certificate in addition to pass matriculation, and (5) as a student of mature years with pass matriculation only. He pointed out that the purpose actuating this raising of the standard was misconstrued, because it was misunderstood. Faced with the dilemma which the less earnest type of student produces, faced also with the fact that scores of students fail in each year in their examinations, the university was driven to the necessity to raising the standard; but this was done solely to bar the student who was too immature, or whose previous education was too meager to enable him to take advantage of the work which the university has to offer him.

GENERAL

General Education Board.—It has been announced by the board that appropriations of $18,210,353 for colleges and universities, $12,029,513 for medical schools and $646,000 for negro education were made during the fiscal year. The total appropriations of the board from its foundation by John D. Rockefeller in 1902 to June 30, 1921, have amounted to $89,017,872. Mr. Rockefeller, it is stated, has released the board from any obligation to hold any of his gifts in perpetuity.

Death Rate from Tuberculosis in Europe and the United States.—Recent statistics taken before, during and after the war, of the death rate from tuberculosis, are as follows:

	Before the War 1913	During the War 1917	After the War 1920
New York	171	164	109
London	130	171	106
Paris	328	295	227
Berlin	156	292	148
Vienna	302	425	405
Warsaw	306	840	338
Lodz	...	1,164	...
Cracow	487	908	...
Lvov	480	665	...
England and Wales	99	134	89
U. S. registration area	128	129	100

Dinner in Honor of President Hubert Work.—On February 16 Dr. and Mrs. Charles Richardson, Washington, D. C., gave a dinner in honor of Dr. Hubert Work, President of the American Medical Association, and First Assistant Post-

master General, at which the Vice President, Calvin Coolidge, and the British ambassador, Sir Auckland Geddes, were also guests of honor. The British ambassador spoke, bringing greetings from the British Medical Association. Among other guests were Dr. Alexander Lambert, Dr. George E. de Schweinitz, President-Elect of the American Medical Association, Surgeon-Generals Ireland, Stitt and Cumming, Brigadier Generals Noble and Sawyer, Dr. T. H. Ball, senator from Delaware, O. H. Shoup, governor of Colorado, Senator L. C. Phipps, Dr. George H. Simmons, Bishop Alfred Harding and Representatives Samuel Winslow and Wallace White.

Bequests and Donations.—The following bequests and donations have recently been announced:

Northwestern General Hospital, Philadelphia, $25,000; Home for Incurables, Philadelphia, $5,000; American Oncologic Hospital, $10,000, one half of which is to endow a bed as a memorial to his wife, Kate G. Schell; Fred Douglass Memorial Hospital, $5,000; Germantown Dispensary and Hospital, $1,000; Gynecean Hospital, $1,000; Hahnemann Medical College and Hospital, $5,000; Howard Hospital, $10,000; Jewish Hospital Association of Philadelphia, $5,000; Kensington Hospital for Women, $5,000; Methodist Hospital, $10,000; Philadelphia Orthopaedic Hospital and Infirmary, $2,500; Philadelphia Polyclinic for Graduates in Medicine, $1,000; Rush Hospital for Consumptives, $1,000; Southern Dispensary, $500; Women's Southern Homeopathic Hospital, $5,000; Woman's Medical College of Philadelphia, $2,500; Maternity Hospital, $1,000; Pennsylvania Hospital, $5,000; Woman's Hospital, $2,500, and the Woman's Homeopathic Association, $2,500, by the will of Harry D. Schell.

Hahnemann Hospital, Philadelphia, $1,000, in memory of his wife, by the will of James M. Stokes.

The Good Samaritan and St. Joseph's Hospital, Lexington, Ky., $10,000 each, by the will of Edmund J. Curley.

Toronto General Hospital, Toronto, Canada, and the Hospital for Sick Children, Toronto, about $94,000 each; Victoria University, Toronto, $100,000, to establish scholarships, by the will of Dr. M. H. Aikins of Burnhamthorpe.

Episcopal Hospital, Philadelphia, $10,000, by the will of Ann Warder Pearsall.

Vineland Hospital Association, New Jersey, a site valued at $30,000 and a hospital costing about $200,000 will be donated by Leverett Newcombe of Vineland.

The Home for Aged Women, and the Eastern Maine General Hospital, Bangor, each $500, in memory of her mother, Augusta H. Bragg, by the will of Florence E. Buzzell of Bangor.

Foundation Fund of the Tri-State District Medical Society of Illinois, Iowa and Wisconsin, $317, by the Milwaukee Medical Society.

Maryland General Hospital, Baltimore, $160,000, by subscriptions, for improvements at that institution.

LATIN AMERICA

Smallpox Epidemic in Costa Rica.—A commission of Red Cross workers has been sent from San José to the outlying districts, where there is an epidemic of smallpox, to organize a sanitation campaign to combat the disease.

FOREIGN

Radium for Paris Hospitals.—The city of Paris has authorized the expenditure of 2,500,000 francs ($183,750, at the present rate of exchange) for the purchase of radium, to be used in the public hospitals for the treatment of cancer.

Personal.—Dr. Christen Lundsgaard, Copenhagen, has arrived in the United States for two years' work on cardiac and pulmonary diseases at the Rockefeller Institute.——Dr. R. Holguín of Puerto Colombia, has left New York to begin practice at Colon, Canal Zone.

First Chinese Woman Physician in Hong Kong.—Dr. Hoashoo, M.B., Ch.B., graduate of Edinburgh University, is the first Chinese woman physician to set up in practice at Hong Kong. During the war, Dr. Hoashoo served in hospitals at Bristol, England, and at Edinburgh.

Public Health Association of Australasia.—At the first annual meeting of the Public Health Association of Australasia, the issue of an official public journal was announced, which will be known as the *Bulletin of the Public Health Association*. The first *Bulletin* was issued in January.

American Physicians in Moscow.—It has been announced by the American Relief Administration, New York City, that Dr. Agha B. Musa, Webster, N. Y., and Dr. J. Rivers Child, Lynchburg, Va., two administration relief workers, who are in the famine districts of Russia, are recovering from typhus contracted while carrying on their work.

Alastrim in Jamaica.—It is reported that the epidemic of alastrim which started in Kingston, Jamaica, in May, 1920, has spread all over the island, over 2,300 cases having been reported during ten months. This disease resembles a mild form of smallpox and originated in Brazil. It has been reported as occurring in Cuba, Australia and Canada, during the last ten years.

International Congress on Mental Hygiene.—The *Informateur des Aliénistes, etc.*, brings the details of the First International Congress on Mental Hygiene, to convene at Paris, May 23-28, 1922. It has been organized by the young and active Ligue de Prophylaxie et d'Hygiène Mentales, and appeals to physicians, educators, manufacturers, and sociologists of all countries. The address of the secretary is Dr. Génil-Perrin, 99 Avenue de la Bourdonnais, Paris. The fee is 25 francs for regular members and 10 francs for others.

Tribute to Professor Netter.—A gold medal was recently presented to Prof. Arnold Netter on the occasion of his retirement from hospital service. He has been *chef de service* at the Trousseau for twenty-five years. The medal presents his portrait on one side, and on the reverse shows him doing lumbar puncture on a child. Wright, the British biologist, brought greetings from across the channel. Netter's publications have been numerous on pneumococcus and paratyphoid infections, poliomyelitis, meningitis and epidemic encephalitis.

English Physicians to Visit Gorgas Institute.—It has been announced by Sir Patrick Manson, member of the advisory committee of the Gorgas Memorial movement, that a number of physicians from the London School of Tropical Medicine will attend courses at the proposed Gorgas Memorial Institute of Tropical and Preventive Medicine at Panama. A cablegram received, January 25, at the Panama legation at Washington, D. C., from President Belisario Porras, president of the Republic of Panama, announces that ground will be broken for the Gorgas Memorial Institute early in the spring on the site contributed by the Panaman government. Dr. Richard P. Strong, dean of the school of tropical medicine, Harvard University, Boston, who has accepted the post of scientific director of the institute, will sail, April 1, for Panama, where he will assume charge of the scientific work in connection with the research work.

Compulsory Insurance Against Sickness in France.—While Alsace and Lorraine formed part of the German empire, they were included of course in the universal social insurance from the very first. Now that they have been returned to France, the country has the spectacle of a thoroughly organized compulsory sickness and old age insurance system in these two departments while nothing of the kind exists elsewhere in France. A bill has been presented in parliament to provide for extension of the system throughout the whole country, and the profession is very much exercised thereat. Our exchanges bring numerous protests from leading physicians against the adoption of the bill. Legrand of Mulhouse in Alsace warns of the perils for the profession in a law modeled too closely on the German system, and tells of the overwork of the insurance physician who, he says, becomes a sort of *spécialiste de l'à peu près*, and the insured go to some other physician to be *examinés sérieusement*. He adds that the physicians who have moved to Alsace or Lorraine from other parts of France are almost unanimous in their condemnation of the German system as they see its workings.

Deaths in Other Countries

Dr. **Alfred Ashby,** medical officer of health of Reading, England, died, January 7.——Dr. **César Cantu Lara,** director of the civil hospital, Monterey, Mexico, died recently, from pneumonia.——Dr. **W. Beattie Smith,** formerly clinical lecturer on mental diseases, University of Melbourne, Australia.——Dr. **Sydney Taylor Champtaloup,** professor of bacteriology, University of Otago, Dunedin, New Zealand, December 11, aged 41.——Dr. **A. Monprofit,** a prominent French surgeon, with a chair at the University of Angers.——Dr. **Keating-Hart,** of fulguration fame, died recently from influenza, aged 52. He is said to have wedded the long electric spark to the high frequency current, and he led the way in thermopenetration and diathermia. He practiced at Marseilles but moved to Paris in 1907.——Dr. **H. J. M. Schoo** of Amsterdam, an authority on malaria and pathologic anatomy, aged 49.——Dr. **N. P. Ernst** of Copenhagen, vice president of the Danish Cancer Research Society, aged 54.——Dr. **R. Klemensiewicz,** formerly professor of pathology at the University of Graz, aged 73.

CORRECTION

Distinguished Service Medal.—In THE JOURNAL, February 11, page 440, it is stated that Dr. Hunter H. McGuire received a distinguished service medal, January 12. The item should have stated that Dr. Stuart McGuire received a distinguished service medal.

Government Services

Surplus Medical Supplies for Russian Relief

Surplus medicines, medical, surgical and hospital supplies held by the War, Navy and Treasury departments and the Shipping Board will be made available for the Russian relief under an executive order issued by President Harding this week. The order is in accordance with the resolution recently adopted by Congress. The supplies will be delivered to the American Relief Administration within four months from the date Congress passed its resolution, Jan. 20, 1922, and will not exceed $4,000,000 in original cost to the government. The relief association is authorized to make the distribution of the materials through its own agencies or those of other relief organizations operating in Russia which may be found in a better position to distribute the supplies to centralized localities.

Army Medical Reserve Corps Assignments

The Medical Reserve Corps officers of the territorial assignment group are being assigned to the duties expected of them in time of war. These officers have been selected after careful consideration of their records of service and their professional and military qualifications and preferences. Notices of assignment are made by corps area or department commanders and indicate the organizational scheme of the employment of officers of the reserve corps and should not be confused with orders for duty. No orders for active duty can be issued at the present time except for training purposes and these are voluntary. Furthermore, under the law, even were appropriation of funds made by Congress, officers of the reserve corps could not be called to active duty for more than fifteen days a year, without their consent. No such plan of compulsory duty is being thought of. The only intention is to afford practical training for those who want it.

Throughout the country, twenty-seven divisions, three in each corps area, as well as many corps and auxiliary units, are being organized and officered entirely by reserve corps officers. Medical officers of the regular army are being detailed as instructors in the proportion of one for each division. These troops will constitute three field armies and require more than 6,500 medical officers; and many more will be required for the auxiliary and special units also being organized by corps area commanders.

The Branch Assignment Group.—This group is composed of officers selected by the Surgeon-General for assignment to organizations to be formed by the War Department and which do not function under territorial commanders. Among these are the general, evacuation, surgical and convalescent hospitals, the various laboratories pertaining to the armies, general hospitals and hospital centers, and of the air service, supply depots, training centers, hospital trains, and air units, as well as regiments, brigades and other tactical units pertaining to the field armies, the general headquarters reserve, the communication zone and zone of the interior. It will be seen that many of these activities pertain to the service at the front and are not confined to the home territory nor to what was formerly known as the S. O. S. To this group are also assigned those medical officers best qualified as professional and administrative consultants and advisers in connection with the organization of the Surgeon-General's office and other War Department offices and activities.

General Assignment Group.—This is a relatively small group of reserve officers retained by the Secretary of War for assignment in time of war. It comprises officers selected at large for general staff duty, general officers, members of Congress, and certain other reserve officers in public life.

Organization of Hospitals and Other Units from the Branch Group.—The classification and grouping of all officers enrolled in the officers' reserve corps have been completed and each officer has been notified of his grouping. The Surgeon-General will soon start the organization of the units to be officered by branch assignment officers. The plans of the War Department call for a very comprehensive scheme of national defense. Many of these units must be organized and will absorb all the officers now enrolled and require many more. The base hospitals under the old organization now become the general hospitals. It is hoped that the identity of the Red Cross and other base hospitals of the World War may be preserved by the use of the same personnel and designation as to numbers. In the organization of the many and varied units, there will be a place for every medical officer of general or special qualifications. The commanding officers and staffs of these hospitals must be selected, and it is essential that representative medical men be enrolled before these hospitals are officered.

The regulations governing the officers' reserve corps are now definitely defined in Special Regulations 43. These govern all matters relating to the appointment, assignment to duty, training and promotion.

Legislation on New Hospital Construction

Chairman Langley of the House committee on public buildings and grounds has asked for a special rule providing for the immediate consideration by the House of Representatives of his bill appropriating $16,000,000 for the erection of new hospitals and the extension of present hospitals owned by the government. Recently, the federal board of hospitalization, with the approval of President Harding, made some recommendations regarding the measure. One of them favored elimination of the appropriation of $500,000 for the enlarging of the Mount Alto Hospital in Washington. Another provided that the construction work should be under the supervision of the director of the U. S. Veterans' Bureau, instead of under the direction of the supervising architect of the Treasury Department. The measure is expected to receive prompt consideration in the House and Senate.

New Tuberculosis Sanatorium Dedicated

Official opening of the new tuberculosis sanatorium at Dawson Springs, which cost the government $2,300,000, took place at Dawson Springs, Ky., on February 22. The institution will be under the direct control of the U. S. Veterans' Bureau instead of the U. S. Public Health Service. No surgeon has yet been designated to take command of the new hospital for disabled veterans and it will be several weeks before patients are installed. The U. S. Public Health Service, however, is making a thorough inspection of the equipment and has taken over the work of installing roentgen-ray equipment and setting up a laboratory. This work is under the direction of Earle T. Bailey of the Public Health Service. Representative David H. Kincheloe of Kentucky, who originally introduced the bill in Congress for the erection of the Dawson Springs sanatorium and who successfully pushed it through the national legislative body, will participate in the ceremonies of the formal inauguration of the Dawson Springs sanatorium that takes place this week. Other public officials will also be present.

Psychiatric Conference Ends

Psychiatric specialists, who met in conference in Washington, D. C., at the invitation of the U. S. Veterans' Bureau to consider the care and treatment of mentally disabled war veterans, have completed their sessions. The result of the meetings was a detailed recommendation for additional government hospital construction in various parts of the country. Twelve thousand additional beds are proposed for the care of mental patients. The recommendations are as follows:

(a) Location of a hospital in the western part of Massachusetts containing 500 beds to receive patients from Vermont, New Hampshire and Connecticut to replace the hospital now in use at East Norfolk, Mass.
(b) Use of hospital at Fort Porter, Buffalo, for mental patients.
(c) Increase in capacity of hospital at Perryville, Md.
(d) Increase in capacity of hospital at Gulfport, Miss.
(e) New institution of 500 beds to be increased later to 1,000 beds in district comprising Ohio, Indiana and Kentucky.
(f) Disapproval of use of the hospital at Maywood, Illinois, and construction of new hospital of 1,000 beds to be increased later to 1,500 beds for district comprising Michigan, Illinois and Wisconsin.
(g) New hospital of 500 beds to be increased to 1,000 beds for district comprising Iowa, Missouri, Kansas and Nebraska, to replace the present institution at Knoxville, Iowa.
(h) New hospital of 500 beds for district comprising Minnesota, North Dakota, South Dakota and Montana.
(i) New hospital of 250 beds to be increased to 500 beds for district comprising Oregon, Idaho and Washington.
(j) Increase in capacity of hospital now being erected at Fort Logan H. Roots, Little Rock, Arkansas.

Director Forbes of the U. S. Veterans' Bureau declared that the recommendations of the psychiatric specialists were being considered by the bureau and further action awaited the action of Congress on the $16,000,000 hospitalization appropriation now before that body.

Foreign Letters

PARIS

(From Our Regular Correspondent)

Jan. 27, 1922.

Insanity, Crime and Alcohol

Under this significant title, Dr. Legrain, who is well known for his works on alcoholism, and more particularly for his monograph "Alcoholism and Heredity," published in the last number of the *Annales médico-psychologiques* an interesting study which deserves careful consideration at the hands of opponents of prohibition. Is alcohol per se the cause of insanity, and if so, under what conditions? Insanity is frequent among alcoholics, and the hospitals for the insane in every land are full of drinkers of alcoholic beverages. It is, therefore, an incontrovertible fact that there is a close connection between alcohol and insanity, as there is between alcohol and crime. Many persons would be able to ward off insanity if they did not come in contact with alcohol, which appears to be the spark in the powder mill, the precipitator, as it were, of the delirium. It seems as if a brain cell prepared and sensitized in some manner is necessary as a secondary causative agent. That is evidently what happens under the conditions in which a superacute state of emotivity develops, as could be noted during the recent war. An extraordinary number of persons, women as well as men, but soldiers more particularly, were overwhelmed by insanity which they would have been able to resist in times of peace. What tended to precipitate the development of insanity was an abnormal consumption of wine and spirituous liquor. How many misdemeanors and crimes, how many absurd and dangerous maneuvers, extravagancies of all kinds, on the part of officers and privates, when under the influence of alcohol and thus rendered more likely to feel and to react to the unusual impressions of war, were noted on every hand. The observations that Legrain himself made in great number before the war councils (more than 500 examinations of psychopathic cases) have furnished ample evidence that, if alcohol had not exerted its demoralizing effects, many trials in which insanity played a part would never have been held.

When we contemplate the wave of degeneracy that threatens to engulf us—the ultimate product of hereditary alcoholism which finds its expression in a progressive decrease of psychic resistance—we understand how essential it is to take account of all the agents that are capable of changing latent insanity to an active state. Alcohol, especially, should be considered in this connection for the reason that the nations of the earth are in a position to destroy the power of this reagent whenever they shall decide to do so, on the same basis that they protect themselves against dynamite and other explosives.

Having been for twenty years at the head of a service in the hospital for the insane at Ville-Evrard, where there was a vast number of cases of toxicomania, Legrain had an opportunity of treating more than 8,000 alcoholics, in whom he was able to demonstrate the significance of sensory disorders, which tend to affect markedly or even to exert a controlling influence over the personality of the individual. The change in the personality of the habitual drinker is so great at times that he lives a secondary life, as it were, which is associated but rarely with the realities of his primary existence. This is a clinical point that is not so well known, particularly among medicolegal experts. Many habitual drinkers suffer from delusions in regard to their state of lucidity. In reality, they are dreaming though awake; they continue to dream much as they did while they were intoxicated, and their lives are controlled by the wildest vagaries and fancies, without any very definite attempt on their part to harmonize these fancies with the other facts of their lives. For some time past, Legrain has called attention to what he terms "folies à éclipse" (a type of temporary insanity), which are, as a rule, visitations affecting those suffering from a delirious intoxication. These ephemeral but repeated attacks of insanity lead finally to the development of a special type of imaginative life, with fantastic, dramatic and melancholy tendencies and especially fertile manifestations. The existence of the drinker has become nothing but a continual deception. The older he grows, the more he reduces his life to a series of automatic acts; that is, he gives up his power of logical control more and more, and yields to the influences of phantasmagoria and the promptings of spontaneity, bereft of the control of reason. Abdicating, step by step, all logical control of himself, the alcoholic moves steadily onward toward a special type of dementia, characterized by the most flagrant moral imbecility, which contrasts very strongly with the most deceptive appearances. This mental make-up is not to be regarded merely as a clinical curiosity. It entails consequences fraught with danger for the family and for society in general, the automatism often taking such forms as lead up to misdemeanors and crime. Nothing in this field is of more striking interest than the categories in which insanity and crime alternate and intermingle, thus giving rise to a natural doubt in the mind as to whether a given subject is in reality a criminal or whether he is insane. Just as the habitual drinker displays a tendency to fall back, if the occasion arises, into his old delirium and into the same stage he was in when he came out of it, he has likewise a tendency to commit the same misdemeanors; in other words, there are *"délits à éclipse et récidivants"* (delinquencies which, while suppressed for the time being, recidivate) just as there are *"folies à éclipse et récidivantes"* (folie or insanity that appears, is suppressed, but continually reappears).

From these interesting facts, many conclusions might be drawn, but Legrain emphasizes only one, which he puts in the form of an exclamatory question. He asks: "Against such a harmful agent as alcohol will there ever be prohibition severe enough? The United States has given the response, and the hospitals for the insane are becoming empty."

Employment of Medical Terms Before Patients

Dr. A. Schwartz, associate professor of the Faculté de médecine of Paris and surgeon to the hospitals, writing in the *Paris médical*, calls attention to a certain danger that lies in the use of medical terminology in the presence of patients. Practitioners have, without doubt, very commonly taken account of this danger and have always endeavored, in order to save their patients useless anxiety, to conceal their diagnosis by the use of terms little known to the general public. For example, in the medical services of our hospitals, the words "tuberculosis" and "tuberculous" are commonly replaced by "bacillosis" and "bacillary," or by *"phimatose"* and *"phimateux."* In like manner, in the surgical services, the word "cancer" is never used before the patients, but "neoplasm" or "epithelioma" is employed instead. At the present time, however, such precautions are no longer adequate, for, owing to the increasing number of medical articles of a popular nature appearing in the daily press, the general public is much better informed on medical subjects than formerly. Nowadays, words that might appear to be absolutely safe may prove to be eminently dangerous. For example, take the word "radium." Quite commonly, in the presence of a cancer, especially if it is inoperable, we propose, before the patient, the use of radium. Owing to the education on the subject that the public has received through the press, the patient concludes that he has a cancer. In illustration of the point, Schwartz reports the following case:

A patient had undergone an abdominal total hysterectomy for cancer of the cervix. She was happy over the idea of being on the road to recovery from an affection which she knew was of a serious nature but the exact character of which had not been told her. As the operator had found extensive lesions and judged that all the pathologic tissue had not been removed, he advised, within hearing of the patient, the use of radium. Immediately the patient betrayed signs of extreme fright and so far all efforts to relieve her of her anxiety had been futile. Since such cases are far from being rare, Schwartz recommends that, whenever under such circumstances it is necessary to refer to the use of radium, we employ some form of camouflage, referring, for instance, to certain physical or chemical treatment. He holds that, generally speaking, it is the duty of the physician to withhold from a patient with a grave lesion an exact knowledge of the nature of his case, since such knowledge gives rise to useless fear and anxiety.

Frequency and Causes of Stillbirths

At a recent meeting of the Congrès annuel d'hygiène, held at the Pasteur Institute, Dr. Couvelaire, professor of clinical obstetrics in the Faculté de médecine of Paris, presented an interesting report on the movement to inquire into the causes of stillbirths and to discover means of lessening their frequency. In France, fetuses are not classed under stillbirths, even though born dead, unless they had entered on the seventh month of the gestatory period. The following three classes are recorded under the same head: (1) fetuses that die during gestation; (2) fetuses that die during parturition, and (3) children born alive but who die within three days after birth, the time within which, according to law, births must be reported to the authorities. Official statistics take no account whatever of fetuses expelled before the end of the sixth month of gestation, many of which cases are due to criminal maneuvers. The published statistics, therefore, do not allow us to show in figures the full social importance of the problem of stillbirths. Nevertheless, we give herewith the statistics on stillbirths for the year 1920, as compiled by the French bureau.

FRANCE

Births of children declared as living	834,411
Births of children declared as stillborn	38,641
Proportion of stillbirths	4.6 per cent.

PARIS

Births of children declared as living	55,813
Births of children declared as stillborn	4,024
Proportion of stillbirths	7.2 per cent.

In his endeavors to ascertain the causes of stillbirths, Couvelaire bases his conclusions more particularly on the documents collected at the Baudelocque Clinic by Professor Pinard from 1890 to 1914, and since then by himself. As regards fetal mortality during the period of gestation, the records of the clinic show, during the period from 1890 to 1919, that out of 57,642 births there were 1,769 stillbirths that occurred before the beginning of parturition, the proportion being slightly in excess of 3 per cent. A careful investigation of the clinical records of these fetal deaths has made it possible to connect them as follows: 653 cases with syphilis, 346 cases with syndromes of toxemia of pregnancy and 175 cases with various causes, among which there were six cases of saturnism due to occupational intoxication. In 572 cases, the cause or causes could not be determined. But, as regards the latter category, a large number of cases were doubtless referable to latent syphilis in the parents or their ancestors. Since Couvelaire introduced in his service the custom of giving the Bordet-Wassermann test to all prospective mothers, the proportion of fetal deaths traceable to syphilis has risen to nearly 50 per cent. of the total number of cases.

Whether the primary cause is syphilis or the toxemia of pregnancy, it is the lack of systematic treatment that is the cause of the death of more than half of the fetuses. For example, of eighty-four cases of fetal death due to the toxemia of pregnancy, as recorded in the Baudelocque Clinic from 1909 to 1919, only three cases had received proper treatment; thirty cases had been treated in an irregular and insufficient manner, and fifty-one had received no treatment at all. Of 233 cases of fetal death due to syphilis, three had been treated for from four to six months, twenty-nine had been treated in very irregular fashion, twenty-eight had not been treated at all, and 173 cases were due to old syphilitic infections that had not been treated because they had not been recognized. This lack of systematic treatment explains why, in spite of progress in therapeutics, the figures for fetal mortality recorded in the maternity hospitals have not varied materially since the beginning of the nineteenth century. The statistics established for the Maternité de Paris by the famed Madame La Chapelle give a proportion of 3.5 per cent. of fetal deaths, which is only slightly higher than the 3 per cent. record at the present time.

The mortality of the new-born during the first few days after birth is also rather high. In 1920, at the Baudelocque Clinic, of 3,021 children born alive, 103 died before the tenth day; namely, forty-nine the first day, twenty-two the second and third days, and thirty-two from the fourth to the tenth day. Of these 103 deaths among the new-born, eighty-four concerned children prematurely born. Premature births are usually determined by the bad physical condition of the mother, who is obliged to work in spite of the advanced stage of pregnancy, and often under circumstances that no breeder of stock would permit to exist. But aside from the physical condition of the mother, syphilis is also a causative factor in premature births. Of the eighty-four cases in which children prematurely born died before the tenth day, seventeen cases were referable to syphilis in the parents, or one case out of five.

Personal

At a recent meeting of the council of the Faculté de médecine of Paris, Dr. Henri Claude, associate professor and physician to the Saint-Antoine Hospital, was appointed to the chair of clinical mental diseases and diseases of the brain, to succeed Professor Dupré, deceased.

LONDON

(From Our Regular Correspondent)

Jan. 30, 1922.

Birth Control

An address delivered to the church congress by a well known physician, Lord Dawson of Penn, on "Love-Marriage-Birth Control," has aroused great interest and has been reprinted in the form of a pamphlet. Lord Dawson traverses a recent pronouncement of the Lambeth (church) Conference which runs: "In opposition to the teaching which under the name of science and religion encourages married people in the deliberate cultivation of sexual union as an end in itself, we steadfastly uphold what must always be regarded as the governing considerations of Christian marriage. One is the primary purpose for which marriage exists—namely, the continuation of the race through the gift and heritage of children; the other is the paramount importance in married life of deliberate and thoughtful self-control." This means, says Lord Dawson, that sexual union as an end in itself (though not the only end) is to be condemned and that sexual intercourse should rightly take place only for the purpose of procreation. As the large majority of conceptions take place immediately after or before menstruation, a large family

could easily result from a few sexual unions. For the rest, the couple should be celibate. But this is contrary to the facts of life. Union constantly takes place as the physical expression of love without thought or intention of procreation. Sex love, apart from parenthood, Lord Dawson holds, is an essential part of the health and happiness of marriage and is to be prized for its own sake.

Turning to birth control, he believes it is here to stay. Despite the condemnation of the church, it has been practiced in France for well over half a century and is extending in other catholic countries. If the Roman church with its authority and discipline cannot check birth control, is it likely that Protestant churches can? The reasons which lead parents to limit their offspring are sometimes selfish, but more often honorable and cogent. The desire of those of limited incomes to rear children well equipped for life's struggle is a forcible motive. Absence of birth control means late marriages and irregular unions, with all their baleful consequences. Some say that the only justifiable birth control is abstention. Such abstention would be either ineffective, or, if effective, harmful to health. To limit the family to, say, four children during the child bearing period would impose abstention equivalent to celibacy for long periods. Artificial control is said to be "unnatural and immoral." This word "unnatural," puzzles Lord Dawson. Civilization involves the chaining of natural forces and their conversion to man's will and uses. When anesthetics were first used in childbirth, many worthy and religious people said that the practice was unnatural and wicked, became God meant woman to suffer the pains of childbirth. Now we all admit that it is right to control the process and save the mother as much pain as possible. It is no more unnatural, says Lord Dawson, to control conception. The question is whether the artificial control is for the good of the individual and the community. The answer depends on the purpose for which contraceptive measures are used. If to render unions childless or inadequately fruitful, they are harmful. It is justifiable to limit the number of children and spread out their arrival so as to insure their true interests and those of the home. But excessive control has evils. There is, first, the individual to be considered: every woman is better in mind and body for child bearing. Maternity gives her her most beautiful attributes. The woman with one child and all child bearing finished before the age of 30 does not compare at 40 in preservation of youth and beauty with the woman of the same age who has had, say, four children at proper intervals. On the other hand, baby after baby every year or eighteen months wears away and often exhausts a woman's strength. The inference is that the use of birth control is good, its abuse bad. Next, as to children: the single child has overanxious parents, is spoilt, and has no children to play with at home. It may die when it is too late to produce another. The loss of the only son was the greatest tragedy of the war.

Boycott of the Appointment of Health Officers of the City of Manchester

The Manchester city council is advertising for a health officer at a salary of $7,500. The British Medical Association has declined to allow the advertisement to be inserted in its journal, and the *Lancet* has taken the same course, on the ground that the salary is inadequate for what is one of the most important health posts in the country. By way of comparison, it is stated that the town clerk of the city receives on appointment $11,250 a year and the city engineer is paid $15,000. It is a common practice for the medical journals mentioned to refuse to insert advertisements of medical posts when they consider the salary offered inadequate, but they do not appear to have taken this course in similar circumstances. It was, previously, a matter of standardizing the salaries for various classes of appointments: here, it is a matter of condemning a large salary not because it does not conform to a prescribed scale but because the post is so important.

Reform of the Lunacy Laws' Administration

A conference on lunacy administration, attended by practically all the medical superintendents of mental hospitals (as they prefer to call them now, instead of "lunatic asylums"), has been held. The following conclusions were unanimously adopted: (1) Early treatment without certification should be legalized. (2) By early treatment many cases would be prevented from suffering permanently from mental breakdown. (3) Such early treatment should be given only in institutions or homes approved for the purpose by the government. The conference did not desire that a hard and fast line should be laid down as to where early treatment should be provided. Sometimes it might be best given at a general hospital; sometimes at a public mental hospital; and sometimes at an approved home. The conference also agreed that the law should be altered so as to allow the reception of voluntary boarders in public mental hospitals.

A Naval Surgeon's Tragic Mistake

During gunnery practice in the Forth, a lieutenant asked the ship surgeon for a tonic. The surgeon intended to give a small dose of strychnin in tincture form, but being unable to lay his hands on the particular bottle he wanted, he decided to give the hydrochlorid, a preparation which he was not in the habit of using. He therefore looked up the dose in his textbook. He misread drachms for minims and gave an overdose with fatal result. Cases of poisoning from a mistake in dispensing are reported from time to time, but no case from the misreading of a dose in a book appears to have occurred.

BELGIUM

(From Our Regular Correspondent)

Jan. 13, 1922.

Governmental Control of Antisyphilitic Arsenicals

With a view to bringing about a standardization of arsenicals by means of governmental control, Dr. Rulot, chief physician of the ministry of the interior, has submitted to the Société Belge de dermatosyphiligraphie the preliminary draft of a bill which seems to be rendered necessary by the fact that arsenical products are being put on the market from the use of which regrettable accidents are arising. From analyses made in the state laboratories, it appears that certain of these products do not contain the proportions of active substances that are claimed for them. Dr. Rulot proposes:

> Antisyphilitic remedies that the physicians who are taking part in the campaign undertaken by the government to prevent the spread of venereal diseases prescribe gratuitously must stand a chemical, biologic and clinical test. The chemical and biologic tests will be carried out by a state laboratory. The results of the clinical tests will be considered and passed on by the Société Belge de dermatologie et de syphiligraphie.

The society admits that this action is well taken but suggests that it be embodied in the report demanded of the society by the ministry of the interior and of hygiene with respect to the medicaments that the state should adopt for the antivenereal campaign.

Syphilis Resistant to Arsenicals

A number of peculiar cases of syphilis absolutely rebellious to neo-arsphenamin treatment have been reported by Dr. de Grave to the Société Belge de dermatologie et de syphiligraphie. The thirteen cases presented much the same characteristics, including the fact that they did not seem to be influenced by neo-arsphenamin. Both primary and secondary lesions are resistant to frequent injections and to gradually increasing doses. Sometimes the lesions would dis-

appear for a time, but they soon reappeared. The positive seroreaction did not yield to the arsenical, and the spirochetes remained numerous. In some of the cases, mercury brought about considerable improvement, while in others it was of no effect. In all cases, silver arsphenamin caused the lesions to disappear and effected an improvement in the seroreaction. In one case, a patient communicated the disease to a woman, in whom the syphilis showed the same peculiar characteristics. There seem, therefore, to be cases of syphilis that cannot be cured by the use of the usual arsenicals. These lesions are of the secondary type, being accompanied by slight reactions in the tissues, or they may be of the secondotertiary type, with marked lesions in the tissues. The former lesions yield to mercury and the latter to silver arsphenamin. It was noteworthy that in these patients the allergic state is raised. They were subjected at first to treatment with too mild doses or the intervals between the doses were too long. One is almost tempted to assume that under the influence of such treatment the spirochetes became mithridatized and that the specific used against them at first had no effect whatever. Under such conditions, other specifics should be employed; but there will be cases in which the resistance of the infection will manifest itself toward many different specifics or even all. Such cases are of the same category as those published by Strickler, Munson and Sidlick (Chicago).

Occupational Intoxication with Arsphenamin

Like many other toxic substances, the arsphenamins may give rise to occupational intoxication. Dr. Slosse recently presented a communication on the subject to the Academy of Medicine. Physicians and nurses connected with services where many intravenous injections of arsphenamin are given were found to present various morbid manifestations: facial pallor, anemia, indigestion, icterus, etc. In such subjects, Slosse demonstrated (1) by the Srzyzowsky modification of the Marsh method, the presence of abnormal quantities of arsenic in the blood, the hair and the nails; (2) by the method of Folin and Flanders, an increase in the quantity of hippuric acid in the urine; (3) by the Tollens method, an increase in the quantity of glycuronic acid in the urine. The absorption of arsphenamin by persons who prepare or administer this therapeutic agent seems to take place principally through the skin.

Prospective Reforms in Medical Education

From time to time, I have referred to the important movement to introduce certain modifications in the medical curriculum and to the action that Belgium is taking in the matter. I wish, further, to mention the conclusions that the Royal Academy of Belgium has reached concerning the character and scope of the secondary instruction by which pupils are prepared for admission to the university medical course. 1. Humanistic studies have for their prime purpose the development of intelligence, and for their secondary purpose the inculcation of a body of knowledge which shall be at once varied and fundamental and such as every one should possess. Ample provision should be made, at the same time, for the physical development of young people. 2. Secondary schools should see to it that pupils are equipped with the main facts in the history of ancient (Greeks, Romans, etc.) and modern civilizations. The history of art should receive its share of attention, while the history of the sciences, belles-lettres and the arts in general must be carefully studied. 3. During the course of secondary studies, all pupils should receive an objective and practical instruction in the principles of the natural sciences; more particularly, physics and chemistry. 4. All secondary pupils should acquire sufficient knowledge of the principles of mathematics and drawing to permit them to express, in the shape of formulas or diagrams, any physical or chemical phenomena desired. 5. Under these circumstances, it seems wise to establish, either at the end of the present secondary course or at the beginning of the university training, a year of study devoted to general biology, history of art, history of literature, the principles of law and philosophy, etc. This would mean a lengthening of the preparatory course of study of all students and would constitute a higher literary and philosophical course. But not only does the course of study need revision; the methods of secondary instruction also should be modified, in order to develop by observation a keen judgment and the ready expression of thought, and to avoid the overloading of the memory. 6. The Academy of Medicine holds that, in the meantime, while secondary studies are undergoing a process of revision, it is advisable to admit to medical and pharmaceutic courses all pupils of the secondary schools in which Latin and mathematics receive the main emphasis, on the same footing as the pupils of the classical schools in which Greek and Latin are kept more in the foreground.

Paravesical Calculi

Before the Société Belge d'urologie, Dr. François discussed recently the clinical, cystoscopic and roentgenologic aspects of calculi found in the vesical portion of the ureter. From the clinical standpoint, calculi arrested in the portion of the ureter that traverses the wall of the bladder and ends in the ureteral meatus are revealed solely by symptoms of cystitis. With the cystoscope, we note changes of the ureteral meatus characterized by redness and tumefaction of the ureteral ostium, and by bullous edema surrounding and concealing the latter. Instead of bullous edema, we may note around the meatus a punctate ecchymosis. From the standpoint of roentgenology, in order to bring out more clearly the organs of the pelvis, the author injects carbon dioxid into the bladder and rectum. Certain calculi betray their presence by a shadow located about a centimeter from the lateral border of the base of the coccyx. To cause such calculi to fall into the bladder, the author, in three cases that he reports, using an endoscope, slit the ureteral meatus by means of a special sound used for electrocoagulation, which he describes in detail.

VIENNA

(From Our Regular Correspondent)

Jan. 29, 1922.

The Influenza Epidemic

About three weeks ago, a fresh epidemic or rather pandemic of influenza developed in this country. This time the authorities were not taken by surprise, and at the outset all necessary precautions could be taken. An important step was the preparation of a large number of hospital beds for the middle classes, who are worst off in case of illness, because they generally have no servants, the bills of physicians are too heavy for a medium income, and the nutritive condition is far from satisfactory. Now they can obtain hospital accommodation of a better kind for a moderate sum, while the working classes are cared for either by their krankenkasse or by the public health service. Up until now, the epidemic has been characterized by a mild course; an enanthem of the fauces is visible, the temperature rarely exceeds 39 C. (102.2 F.), slight tracheal or bronchial involvement is noticed, and nasal and aural complications of a mild type. Mortality is as yet low. Notification of influenza is now compulsory, as disinfection is carried out by the municipal board of health.

Termination of the Medical Strike and Conflict with the Krankenkasse

As has been reported in a previous letter (THE JOURNAL, Jan. 21, 1922, p. 208), the dissatisfaction of the medical staff

of the krankenkassen has found outlet in a strike, which lasted for more than ten weeks, and deprived the insured workers of their guaranteed medical help. They could have obtained it, of course, but only as paying private patients. Finally, an agreement was arrived at, by which the medical officers obtained nearly 80 per cent. of their demands. They get now about 150 times their peace-time salaries, and will in future be paid according to the "index," i. e., the ratio of the rise or fall of the average expenditure necessary for the purchase of the principal foodstuffs in this country. The outcome is as complete a victory for the profession as could be hoped for. It shows that only by uniting all physicians in one organization and acting on the principle "unus pro omnibus, omnes pro uno" is a definite success sure. It is interesting to note that all along the government did not care very much about interfering, hoping, no doubt, that the profession would have to yield in the end. The success, however, will strengthen the position of our representatives in the coming contest for a "medical act," which is being worked out now. Here the chief points of opposition are to be found in the endeavor of the profession to obtain a sort of self-government, while the other party tries to continue its authoritative control of the physicians and their work.

Control of the Pharmaceutic Substances in Dispensaries

The chemicopharmaceutic laboratory of the board of health a year ago established a regular service for the control of the remedies sold by the apothecaries to the public. In 1921, more than 800 laboratories and pharmacies were visited and nearly 5,000 samples were taken, especially in smaller places in the country, where ineffective or spoiled goods could be expected. As a rule, not more than 15 per cent. of the samples were not up to the required standard, while in no place was the percentage less than 5 per cent. Digitalis folia was most frequently found ineffective, while adulterations were only rarely observed, in the majority of cases among the alkaloids and narcotic drugs only.

The Antituberculosis Provisions in Austria

The board of health has issued a small booklet to all medical centers and practitioners, containing all the information necessary to give patients instructions as to the available means of combating tuberculosis in this country. We have here three groups of such institutions: first, the "welfare centers" or tuberculosis dispensaries; second, special tuberculosis sanatoriums; and, third, the tuberculosis wards of the general hospitals all over the country. In the first group, a fully competent lung specialist, with the help of two or three trained nurses, gives not only advice as to prophylaxis and hygiene in the patient's relations with his family and friends, but gives also ambulatory treatment to patients not requiring proper hospital attendance. In cases requiring hospital care, a bed is procured for the patient much more readily than if the patient himself applies to the hospital. An important feature of this work is also the control, by regular visits in the patient's home, of the convalescing tuberculous person. To that end, the nurses are trained in a special course for "tuberculosis sisters." There are forty-three such welfare centers distributed over the country, situated chiefly in the populous districts of the capital and the provincial cities, where the laborers dwell. In the second group, comprising twenty-seven special institutions, there are about 3,500 beds available for persons suffering from internal or surgical tuberculosis. These sanatoriums are situated chiefly in the sunny or mountainous districts of the Alps, and are equipped with all appliances and apparatus for modern phthisiotherapy — Finsen light, quartz lamps and roentgen rays. The state has of late acquired the control of about 1,800 beds in these institutes, so that the poorer classes also can obtain the benefit of this kind of treatment. Especially for children, about 400 beds are reserved, and the school physicians and the welfare centers have the right to recommend their patients to the state authorities. In the third group, we have 5,700 beds in the general hospitals, both public and private, intended for the treatment of surgical and internal tuberculosis. Of this number about one fourth are set aside for children. In Vienna alone, 3,400 beds belong to this group, and even this is not sufficient. The charges for this hospital accommodation are as a rule borne by the state or the corporations, which are responsible for the health of their members (krankenkasse, civil service, municipal corporations, industrial firms, etc.). In some instances, the expenditure is covered by special tuberculosis grants from philanthropic societies. In any case, the authorities now try to send every patient out to the country for a while, and then keep him under control by notifying the respective "welfare center," so that the ring is closed. Still the number of hospital beds available for tuberculous patients is small in proportion to the total number of hospital beds, being less than 20 per cent.

Cancer Research in Austria and Its Present State

Some time ago, the Austrian Society for Cancer Research distributed questionnaires among the profession of this country. In connection with this investigation, Professor Frankel recently read a paper on the subject of cancer research before the medical society of Vienna, in which he gave a review of the present state of the problem. Hunter had begun such an inquiry as early as the beginning of the nineteenth century, and many problems which were a riddle to him have been solved. The pathologic-histologic entity of cancer is settled, but the diagnosis is still doubtful in very many cases; for instance, in cases of the gastro-intestinal canal, cancer was not recognized in more than 18 per cent. of cases, taking the last five years as an average. There is no known method of recognizing the condition at its beginning. However, it has been definitely settled that nearly every individual cancer has its own prognosis, and the histologic constitution alone does not always regulate the malignity or benignity. People who have resisted all other diseases often fall victims to cancer, and its influence on the organism is variable; for example, severe cachexia may be present in very small cancers without severe symptoms. The etiology is extensive. There is the roentgen-ray cancer, purely exogenous, showing little tendency to metastasis; also the xeroderma pigmentosum. The senile involution is often marked by cutaneous carcinoma; higher parasites (vermes, spiopteres) or chemical agents (soot, tar, paraffin, anilin dyes) also produce cancer formations. In other instances, endogenous etiologic factors must also be considered. The nervous carcinoma, the branchiogenous tumors, are no doubt explained by Cohnheim's embryonal theory. Neoplasma follow the same hereditary rules as the malformation. Although statistics do not give a striking proof of the hereditary transmission of cancer, it cannot be doubted that the disposition to it is hereditary. In certain districts in which cancer appears frequently, one must think of parasitic etiology. The pathology of animals shows that invertebrates are free from cancer. In human cancer, the localization in the uterus, stomach or rectum is much more frequent than in the duodenum or ileum. In herbivorous animals, the cancer is usually found in the respiratory tract. Immunology has not hitherto thrown much light on the problem. But the united efforts of pathologists and statisticians, together with general practitioners, who see the development of the evil and often its termination, will aid in unraveling the mystery of cancer by elucidating the following points: frequency, contagiousness, heredity and etiology.

Marriages

LOWRIE JAMES PORTER, Grand Rapids, Mich., to Miss Priscilla Alden Laing of New Rochelle, N. Y., January 13.

JOHN MILLER TRAIN FINNEY, JR., Baltimore, to Miss Virginia Lee Milton of Wilmington, N. C., February 4.

WILLIAM EDWARD GALLAGHER, Akron, Ohio, to Miss May Rieger of Niagara Falls, N. Y., January 24.

CHARLES A. LEISHER, Cleveland, to Miss Lillian Schreiner of Charleston, W. Va., February 4.

HARRY D. WEBSTER, Doniphan, Neb., to Miss Pauline Weirick of Denver, December 29.

WILLIAM A. MCMURTRIE to Miss Nora Pruden, both of Norristown, N. J., January 4.

ALLEN G. CROW, Cleveland, to Miss Avanell Frenier of Newark, Ohio, December 26.

CHARLES B. EDWARDS, Overton, Neb., to Miss Lillian Arndt of Lincoln, recently.

HARLAN HUBBEL, Laura, Ill., to Mrs. Mabel Wells of Peoria, Ill., January 21.

Deaths

James William Holland, Philadelphia; Jefferson Medical College, Philadelphia, 1868; died, February 10, in the Jefferson Hospital, aged 73. Dr. Holland was born in Nashville, Tenn., April 24, 1849; received his A.M. from the University of Louisville, 1868; professor medical department, University of Louisville, 1872-1875; editor of the *Louisville Medical News* in 1880; formerly president of the Kentucky State Medical Association and member of the Kentucky State Board of Health. Dr. Holland then removed to Philadelphia and became professor of medical chemistry and toxicology, 1885-1912; dean of the faculty, 1887-1916, Jefferson Medical College; member of the American Philosophical Society and fellow of the College of Physicians of Philadelphia; member of the Council on Medical Education, American Medical Association, 1907-1916; author of "Diet for the Sick," "Common Poisons and the Urine," "Mineral Poisons" and "Textbook of Medical Chemistry and Toxicology."

Walter Van Fleet, Glendale, Md.; Hahnemann Medical College and Hospital of Philadelphia, 1880; died in Miami, Fla., January 27, following an operation, aged 64. Dr. Van Fleet in 1892 became horticultural editor of the *Rural New Yorker*, New York; served with an expedition up the Amazon to collect new species of birds and plants; plant pathologist to the United States government since 1910, and author of several books on the subject of horticultural hybridization.

Jacob Anthony Kimmell, Findlay, Ohio; Cleveland Medical College, Cleveland, 1869; veteran of the Civil War; former postmaster of Cannonsburg, Ohio; served in the Ohio state legislature, 1895; secured the passage of the Kimmell bill, a medical law for the examination and registration of physicians and surgeons in Ohio; surgeon of the Cleveland, Cincinnati, Chicago and St. Louis Railroad for twenty-two years, and president of the railroad surgeons of that system in 1909; died, February 2, from arteriosclerosis, aged 77.

Young Hance Bond, St. Louis; University of Maryland School of Medicine, Baltimore, 1867; former president of the Medical Society of St. Louis; member of the board of health; founder, 1890, and president of the Marion Sims College of Medicine, St. Louis, until it became the Medical Department of St. Louis University in 1903, of which he was dean for three years; founder of the St. Louis Dental College; died, February 5, from angina pectoris, aged 75.

James Watt Fleming ✪ Brooklyn; Long Island College Hospital, Brooklyn, 1880; founder, and for twenty-five years chairman, of the Eastern District, Y. M. C. A.; formerly president of the Kings County Medical Association; served during the World War on the local draft board; died suddenly on the street, February 7, while returning from a professional call, from heart disease, aged 67.

David Inglis, Detroit; Detroit Medical College, Detroit, 1871; Bellevue Hospital Medical College, New York City, 1872; member of the Michigan State Medical Society and president, 1906-1907; formerly consulting neurologist to the Harper Hospital, Detroit; clinical professor of neurology and pyschiatrics, Detroit College of Medicine and Surgery; died, February 1, at Tryon, N. C., aged 72.

John Munro Elder, Montreal, Quebec; McGill University Faculty of Medicine, Montreal, 1885; surgeon major with the Canadian army during the Northwest Rebellion, 1885; served in France, C. A. M. C., with the rank of colonel during the World War, 1915-1919; formerly assistant professor of surgery and clinical surgery at his alma mater; died, February 5, from septicemia, aged 62.

Newton Elisha Webb, Washington, D. C.; National University Medical Department, Washington, 1901; member of the Medical Society of the District of Columbia; member of the board of trade; died suddenly, February 11, while attending a patient, from heart disease, aged 56.

Ora Dewitt Holland, Streator, Ill.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, Ky., 1879; Bellevue Hospital Medical College, New York City, 1880; died, December 15, at Long Beach, Calif., from heart disease, aged 68.

George Clement Samson, Washington, D. C.; University of Pennsylvania, Philadelphia, 1869; member of the Medical Society of the District of Columbia; physician in charge of the Soldiers' and Sailors' Orphan Home, Washington, 1870-1879; died, February 11, aged 73.

Martha Elizabeth Reifsnyder ✪ Liverpool, Pa.; Women's Medical College of Pennsylvania, Philadelphia, 1881; served as medical missionary in Shanghai, China, since 1883, at the Margaret Williamson Hospital; died, February 4, from heart disease, aged 64.

Eleazur King Nash, Akron, Ohio; Cleveland Medical College (Western Reserve University School of Medicine), Cleveland, 1861; Civil War veteran; member of the Ohio State Medical Association; died, February 10, from senility, aged 93.

James Francis Sullivan, New York City; Medical Department of the University of the City of New York, 1878; formerly physician at the Alms House, Tarrytown, N. Y.; died suddenly, February 4, in his office, from heart disease, aged 64.

William G. Hier, Cincinnati; Pulte Medical College, Cincinnati, 1884; member of the Ohio State Medical Association; formerly professor of sanitary science and hygiene, Pulte Medical College; died, February 2, at Madisonville, aged 66.

John Addison Jenkins, Brooklyn; Bellevue Hospital Medical College, New York City, 1865; member of the Medical Society of the County of Kings and the Medical Society of Greater New York; died, February 4, from senility, aged 78.

Charles Russell Conway, Greensburg, Ind.; American Medical College, St. Louis, 1896; formerly known as Charles W. Pagel; died, December 29, at La Ceiba, Honduras, C. A., from septicemia resulting from snake bite, aged 51.

James A. Shirley, Mount Sterling, Ky.; University of Louisville, Ky., 1872; president of the Montgomery County Medical Society; president of the county board of health; member of the school board; died, January 28, aged 75.

Milton B. Blouke, Chicago; Chicago Homeopathic Medical College, 1885; at one time professor of gynecology, Hahnemann Medical College and Hospital of Chicago; died, February 13, at St. Petersburg, Fla., aged 59.

Harrison Gray Blake, Woburn, Mass.; Medical School of Harvard University, Boston, 1888; member of the Massachusetts Medical Society; member of the Massachusetts Medico-Legal Society; died, January 6, aged 57.

Henry Scammon Edson, Deer Lodge, Mont.; Rush Medical College, Chicago, 1917; during the World War served as lieutenant, M. C., U. S. Army; local surgeon of the Northern Pacific Railroad; died recently, aged 30.

William Christopher Berry, Boston; Tufts College Medical School, Boston, 1907; member of the Massachusetts Medical Society; died, February 8, at the Peter Bent Brigham Hospital, from pneumonia, aged 62.

James Stein, Philadelphia; University of Pennsylvania, Philadelphia, 1887; served during the World War; former coroner of Lackawanna County; died, January 30, from cerebral hemorrhage, aged 55.

Marcus Summerfield, New York City; Eclectic Medical Institute, Cincinnati, 1864; also a lawyer; formerly member of the faculty of the law school of the University of Kentucky; died, January 19, aged 79.

✪ Indicates "Fellow" of the American Medical Association.

Alexander Logan Cope, Winona, Ohio; Western Reserve University School of Medicine, Cleveland, 1888; member of the Ohio State Medical Association; died, January 28, from angina pectoris, aged 72.

William Culbert Lyon ✠ Annapolis, Md.; University of Maryland School of Medicine, Baltimore, 1907; lieutenant, M. C., U. S. Navy, retired; died at his home, Valatie, N. Y., February 6, aged 42.

Jacob Oosting ✠ Muskegon, Mich.; Detroit College of Medicine, Detroit, 1897; city physician; medical examiner of the Muskegon County draft board; died, January 30, from pneumonia, aged 56.

Henry Thomas Carter, North East, Pa.; Medical Department of the University of the City of New York, 1883; member of the Medical Society of the State of New York; died recently, aged 61.

James A. Judkins, Barnesville, Ohio; Medical College of Ohio, Cincinnati, 1866; veteran of the Civil War; member of the county board of charities; died, February 2, from pneumonia, aged 79.

John Louis Wessels, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1888; member of the Medical Society of the State of Pennsylvania; died, February 2, aged 66.

Charles Albert Johnson, Barry, Ill.; Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa, 1903; was shot and killed by an insane man, February 7, aged 41.

Rueben Frederick Fellows, Des Moines, Iowa; St. Louis College of Physicians and Surgeons, St. Louis, 1897; died, January 29, at Punta Gorda, Fla., from pneumonia, aged 56.

Alfred Turpin Calhoun ✠ Cartersville, Ga.; Atlanta Medical College, Atlanta, Ga., 1890; at one time councilor of the Medical Association of Georgia; died, January 31, aged 59.

Edward Augustus Cook, Kirks Grove, Ala.; Vanderbilt University Medical Department, Nashville, Tenn., 1884; died, December 18, from chronic cystitis and gastritis, aged 64.

Levi Oberholtzer, Phoenixville, Pa.; University of Pennsylvania, Philadelphia, 1854; former burgess of Phoenixville; also a druggist; died, February 2, from senility, aged 89.

Joseph Allen Horne, Philadelphia; University of Pennsylvania, Philadelphia, 1880; member of the Medical Society of the State of Pennsylvania; died, January 4, aged 72.

William Rowley ✠ Gloucester, Mass.; Baltimore Medical College, 1893; served on the medical board of the Addison Gilbert Hospital; died, January 29, aged 57.

John Montgomery Malony, Dundee, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1870; died, January 31, following a long illness, aged 76.

Wellington T. Stewart ✠ Chicago; College of Physicians and Surgeons (University of Illinois), Chicago, 1893; died, February 11, from heart disease, aged 57.

Daniel Winfield Layman, Des Moines, Iowa; Medical Department, University of Illinois, Chicago, 1904; died, January 15, at San Diego, Calif., aged 42.

Harry Horner Hubbell ✠ Corning, N. Y.; University of Buffalo, N. Y., 1901; consulting physician, Corning City Hospital; died, January 26, aged 43.

Arthur Blake Clarke, Plantersville, S. C.; University of Maryland School of Medicine, Baltimore, 1906; died, January 31, from lobar pneumonia, aged 51.

Oliver S. Weddell, McKeesport, Pa.; Jefferson Medical College, Philadelphia, 1876; former city physician; died, January 27, from pneumonia, aged 74.

John C. Anderson, Greenpond, Va.; College of Physicians and Surgeons, Baltimore, 1876; died, November 25, from carcinoma of the prostate, aged 70.

Acastus L. Macomber, Norfolk, Neb.; New York Homeopathic Medical College, New York City, 1872; died, January 28, in Rochester, N. Y., aged 77.

Edward Martin Wise, Baltimore; University of Maryland School of Medicine, Baltimore, 1877; died suddenly, February 5, from heart disease, aged 67.

Eugene Jeffrey Brinson, Americus, Ga.; Meharry Medical College, Nashville, Tenn., 1898; died, February 2, from cerebral hemorrhage, aged 49.

John Baxter Carson ✠ Blairsville, Pa.; Jefferson Medical College, Philadelphia, 1889; died, suddenly, January 30, from heart disease, aged 55.

Solon R. Wakefield ✠ West Salem, Wis.; Rush Medical College, Chicago, 1879; died suddenly from heart disease, February 4, aged 70.

George Ball Rowell, San Bernardino, Calif.; McGill University Faculty of Medicine, Montreal, Quebec, 1884; died, January 15, aged 62.

Arthur Allen Gibson, Somerville, Mass.; University of Vermont College of Medicine, Burlington, 1877; died, February 6, aged 72.

Caroline Hempstead Marsh-Wikle Farrell, Jonestown, Pa.; Woman's Medical College of Philadelphia, 1890; died, January 15, aged 58.

Emanuel William Eilau ✠ Baltimore; University of Maryland, Baltimore, 1879; died suddenly, February 1, from heart disease, aged 68.

James A. Martin, Mount Zion, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1887; died, January 21, aged 72.

Francis R. Sparling, Marietta, Ohio; Starling Medical College, Columbus, 1880; died, February 3, at Devois Dam, aged 68.

Robert Reed Stewart, Philadelphia; Jefferson Medical College, Philadelphia, 1882; died, February 2, from heart disease, aged 74.

Sarah Elizabeth Simonet, Croghan, N. Y.; University of Buffalo, N. Y., 1885; died, February 3, from heart disease, aged 68.

George Roberts, Alexandria, Va.; University of Pennsylvania, Philadelphia, 1868; died, February 1, from senility, aged 75.

Walter Miller, Millerton, N. Y.; Albany Medical College, Albany, N. Y., 1882; died, January 13, from heart disease, aged 66.

Samuel Abraham Christie, South Acton, Mass.; College of Physicians and Surgeons, Boston, 1903; died, February 3, aged 67.

Daniel L. Campbell, DeFuniak Springs, Fla. (license, Florida, years of practice); died, January 27, from senility, aged 87.

William Henry Tippie, Tremont City, Ohio; Starling Medical College, Columbus, Ohio, 1895; died, December 11, aged 61.

George Nixon White, Canadian, Texas; Eclectic Medical Institute, Cincinnati, 1884; died, January 26, from pneumonia, aged 71.

John W. Christian, Concord, Tenn.; Tennessee Medical College, Knoxville, 1898; died, January 20, from pneumonia.

Marcellus R. Toland, Los Angeles; Southern Medical College, Atlanta, Ga., 1883; died suddenly, February 5, aged 68.

Frederick E. Dalrymple, Lincoln, Neb. (license, Nebraska, 1881); died, December 23, from diabetes mellitus, aged 70.

Henry Nathan Litchfield, Darby, Pa.; Medico-Chirurgical College of Philadelphia, 1904; died, December 15, aged 51.

James Robert F. Bell, Philadelphia; University of Pennsylvania, Philadelphia, 1869; died, December 16, aged 76.

Albert Volkenberg ✠ New York; Medical Department of the City of New York, 1883; died, January 31, aged 72.

Robert Foster Dayes, Freeport, Ill.; University of Pennsylvania, Philadelphia, 1858; died, November 6, aged 85.

William A. Smith, Walnut Ridge, Ark.; Kentucky School of Medicine, Louisville, 1893; died, January 30, aged 60.

Jonathan N. Shemwell, Barlow, Ky.; Kentucky School of Medicine, Louisville, 1889; died recently, aged 89.

T. B. Satterfield, Oklahoma City (years of practice); died, January 24, at the University Hospital, aged 84.

J. R. Groover, Key, Ga.; Atlanta Medical College, Atlanta, 1876; died, January 16, from senility, aged 81.

Samuel Russell, Brooklyn; Long Island College Hospital, Brooklyn, 1875; died, February 3, aged 84.

Felix M. Borucki ✠ Chicago; University of Kharkov, Russia, 1874; died, February 13, aged 73.

Jonathan Moffett, Malvern, Ohio (years of practice); died, January 17, from pneumonia, aged 87.

John Nevins, Greene, Iowa; Rush Medical College, Chicago, 1886; died, January 27, aged 61.

Thomas Howell, Havana, Fla. (years of practice); died, February, 3.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

LIPOIDAL SUBSTANCES (HOROVITZ) NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report declaring Lipoidal Substances (Horovitz) inadmissible to New and Nonofficial Remedies because its composition is essentially secret and because the curative claims made for it are unsubstantiated and, therefore, unwarranted.

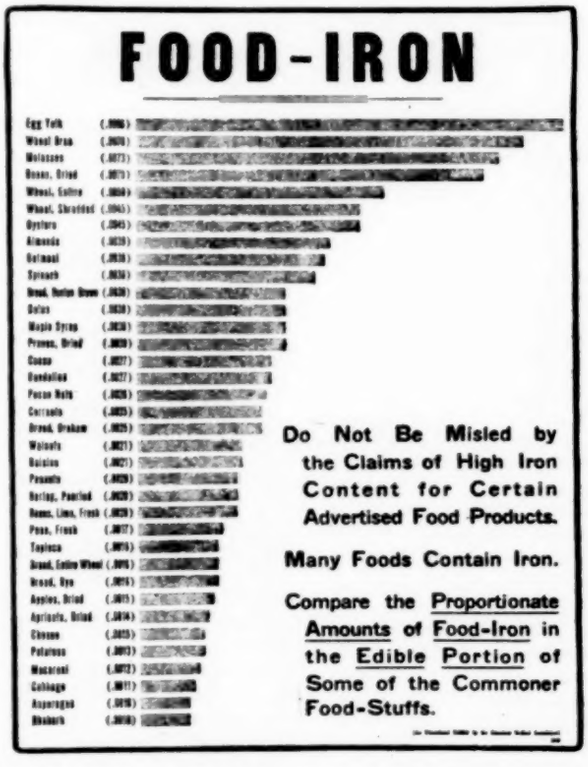
W. A. PUCKNER, Secretary.

In the advertising of the Horovitz Biochemic Laboratories Co. (A. S. Horovitz, president) we read:

"Horovitz proves by careful paralleled investigations of normal and of pathological tissues, both in addiction disease and in other diseases, that in patients suffering from narcotic addiction disease there is an inactivity of the lymph-glands due to the use of the drug and that the system is not supplied with the necessary fats." "Horovitz further found that the lipoidal content of the cerebro-spinal system varies in strict accordance with the pathological processes introduced by infection or by alkaloids. Furthermore, he has found that the lipoids of various other organs, as well as those of the nervous system, may be extracted and consumed by the administration of narcotic alkaloids."

It is further stated in the advertising that:

"After a long and very careful research investigation, Dr. Horovitz worked out a method of rational treatment for narcotic addiction disease which involves the restoration of the lipoids, which have been lost through the action of the drug, and of the toxins, by means of a combination of lipoidal substance from various plant lipoids in the form of a sterile solution. This preparation not only replaces the lipoids lost by the tissues, but also protects the nerve tissues, from attacks by the toxins elaborated during the use of narcotics, and, this by detoxicating the tissues, brings about permanent freedom from the craving of narcotics, instead of the temporary relief afforded by other methods of treatment."



Photographic reproduction (greatly reduced) of one of the Educational Posters prepared by the Propaganda Department. In the original these posters measure 22 by 28 inches. This one is published for the purpose of offsetting to some degree the misleading claims made by the exploiters of certain advertised food products relative to the amount of food-iron such products contain.

The "combination of lipoidal substance of various plant lipoids" which was worked out by Horovitz, the Horovitz Biochemic Laboratories offer as "Lipoidal Substances." This preparation is supplied in ampoules said to contain 1 c.c. of solution. The treatment with "Lipoidal Substances" consists, first, in the complete withdrawal of the narcotic; second, in free catharsis; and third, in the intramuscular injection of the preparation. The initial dose is given as 8 to 12 minims repeated with increase of 3 to 4 minims every three hours during the first day. On the second, third and fourth day 16 minims is to be given twice a day and "from the fifth day until the medication is stopped (usually 28 to 35 days) it will be necessary usually to give but 1 injection of 16 minims each day."

In a request for the admission of its preparation to New and Nonofficial Remedies, the Horovitz Biochemic Laboratories Co. stated:

"The composition of Lipoidal Substance is (*a*) Lipoids of plant origin, (*b*) Vitamines (water soluble) of plant origin, (*c*) Non-specific plant proteins, (*d*) Preservatives—None."

While the communication abounded in generalities, it gave neither the identity nor character of the lipoids, of the vitamins nor of the nonspecific protein, nor their quantities or methods for their control. The firm presented no evidence that the injection of "Lipoidal Substances" produced any effect other than by suggestion. Also, while a long list of references to publications bearing on lipoids was submitted (many of which had no bearing on the subject under consideration) there was no reference to the work of Horovitz quoted in the firm's advertising.

After examining the information which had been submitted, the Council requested the manufacturer to supply:

1. Information as to the character (identity) of the several ingredients contained in the preparation that it marketed, the amount of each ingredient so far as known and the method used for their control.

2. Evidence that the administration of "Lipoidal Substances" is of value in the treatment of drug addiction.

3. Evidence for the claims that the "researches" of Horovitz have proved that "in patients suffering from narcotic addiction disease there is an inactivity of the lymph-glands . . . and the system is not supplied with the necessary fats" and that "lipoidal content of the cerebro-spinal system varies in strict accordance with the pathological processes introduced by infection or by alkaloids" and that "the lipoids of various other organs as well as those of the nervous system, may be extracted and consumed by the administration of narcotic alkaloids."

The Horovitz Biochemic Laboratories replied that the requested information would be supplied in about *two weeks*. At the expiration of *three months* the promised information and evidence had not been received; neither had any reports to show the value of the treatment come to the attention of the Council. The Council, accordingly, declared "Lipoidal Substances" (Horovitz Biochemic Laboratories) inadmissible to New and Nonofficial Remedies because the composition is essentially secret and because the curative claims are unsubstantiated and unwarranted.

Standardization of Biologic Stains.—A conference was held in November, in New York City, under the auspices of the National Research Council to discuss the standardization of biologic stains, with the object of developing a reliable American supply of these. It was stated that the stains must be standardized by three different methods: chemical analysis; testing for bacterial staining, and testing for histologic purposes. The bacterial staining has achieved satisfactory results in obtaining basic fuchsin and methylene blue and work is now in progress on gentian violet. A committee was appointed under the division of biology and agriculture, with the cooperation of the division of medicine, for the organization of further plans in this direction. Dr. Frederick G. Novy, University of Michigan, and Dr. Frank B. Mallory, Boston City Hospital, are on the committee.

Correspondence

A COURT OF DECENCY FOR PHYSICIANS

To the Editor:—Among the activities of various medical associations to stimulate legislative enactments favorable to our interests and to block legislation detrimental to them, one important form of propaganda is being omitted. Medicine, like any other public utility dependent on the good will of the consumer for the franchise regulations that give it life, should have some mechanism to take care of complaints of customers dissatisfied with the service. In every other profession, the law, the ministry, the army and the navy, and in academic and legislative bodies there is what might be called a court of decency to which the layman can appeal for information or enlightenment in regard to acts of any member of these professions that he may consider wrong; a committee that has the power to disbar from membership in these associations on account of numerous offenses, among them so subtle a one as "conduct unbecoming a gentleman."

There is need in our profession of a similar court before which the public can carry complaints for maltreatment, real or imagined, medical or financial, with the assurance that members of our profession who may have offended in their relations with the public will, if found culpable, become subject to reprimand and censure by this body of their peers, that redress will be offered, a penalty be imposed and, in extreme cases, a license be revoked or disbarment instituted. Such a court could be national, or limited to each state or even to smaller communities. Our boards of censors or committees on ethical relations do not answer this purpose as far as the layman is concerned; they settle disagreements among physicians and are merely a loose league of medical men with a mandate over professional conduct.

As things are drifting today, health centers, medical groups, superspecialists, etc., are driving a cold wedge between physician and patient. The sick person coming to his physician in pain or suffering, frightened and in confidence, misses the old hearty personal relation for which we are substituting something very mechanical. On account of the increased "overhead" incident to these modern arrangements, it has become more and more difficult to exclude commercialism and to rule out the element of cupidity. The tendency is for the doors to be thrown open to questionable practices, professional and financial, chiefly along the lines of needless surgery, needless diagnostic fussing, and unduly prolonged courses of treatment, with needless hospitalization and consequently needless expense. It is really quite wonderful that in the great majority of instances the work remains as honest as it is; for it is very easy to be crooked, and the difference between straight and just a little crooked can make an enormous difference in the professional income. I think the public is beginning to understand this, to assume an attitude of somewhat amused suspicion toward the doctor, and in general to contemplate acts of self-defense.

We should hold communion with ourselves and recognize this attitude and the facts that underlie it. If we can reestablish an attitude as friendly to the profession collectively as it was, and, broadly speaking, still is, to the family physician, then we have "sold" them our estimate of ourselves and it will not then be necessary by legislative enactments to ram it down their throats.

In order to make the people feel that generally their confidence in their physicians remains justified and that the element of cupidity is not brought into the foreground as often as they imagine, they must, in cases of abuse, have an outlet for their grievance. The patient with a "kick" may tell his troubles to his friends, maybe to another physician, or he may go to law; but he rarely secures any satisfaction. Many cases arise in which recourse to the law can offer nothing or in which factors of delicacy preclude the airing of grievances in public, cases in which the code of decency rather than the code of laws has been violated.

If people cannot complain, they grow more angry than if they had spoken. Collectively, these unspoken, unrequited grievances have done more to undermine the confidence of the public in our profession and have created more opposition to legislation in favor of the profession, more fear of a medical trust, than any other single factor that we have to deal with.

If, therefore, we wish to retain the good will of the public, and by means of a friendly electorate stimulate our legislators to regulate the practice of medicine as we should like to have it regulated, because most physicians recognize that the interests of the patient should be given first consideration, then as a first and essential step we should inaugurate an effective mechanism of self-purification and allow the public to participate in the process.

ALFRED C. CROFTAN, M.D., Chicago.

"THE SERUM PROPHYLAXIS OF MEASLES"

To the Editor:—In his paper on the serum prophylaxis of measles (THE JOURNAL, Feb. 4, 1922, p. 340) Dr. McNeal mentions the work on immunization against measles which I have been carrying on since 1914, and makes a criticism of my method, which at first sight seems justifiable, namely, that "the method cannot be recommended strongly because of the danger of producing a severe attack of the disease in a susceptible infant, and also of introducing other virulent organisms." These objections are theoretical rather than real, for I have immunized about 150 infants without a single unfavorable effect. It goes without saying that certain precautions must be taken in the selection of the individuals from whom the infectious material is taken, and in the infants to be immunized. However, as I myself have stated, in order to make the method safe for general use, it would be advisable to free the mucus from extraneous micro-organisms. I do not think it would be very difficult to obtain a preparation which would be bacteria free and which would still retain its potency.

The use of convalescent serum for the purpose of immunization against measles has only a limited application. As Dr. McNeal says, "One child contracted measles two months after successful injection; this suggests that the immunity does not persist longer than sixty days in some cases." The method is only of value in protecting a group of susceptibles when they are exposed to infection, and even then it is not certain, as the published reports show. However, this is only a very small part of the measles problem. In a paper on this subject (*Arch. Pediat.* **34**:933 [Dec.] 1917) I stated that "after years of observation of the spread of measles, I have become convinced that a real control and a distinct reduction in the morbidity and mortality is impossible with our present prophylactic measures. A true control can only be obtained by the immunization of infants against the disease." Dr. McNeal recognizes this, for he says: "A marked attenuation of the disease with permanent immunity, but without complications or sequelae, would seem to be more advantageous than the absolute but transient protection."

The necessity for immunizing young infants will become apparent if we compare the results obtained by vaccination against smallpox with those obtained by the use of antitoxin against diphtheria. By vaccinating all young infants, smallpox has been almost eradicated. In diphtheria antitoxin we

have a certain means of protecting susceptible individuals who are exposed to infection. What has been the result? After the introduction of diphtheria antitoxin, there was a distinct reduction in the mortality, but during the last ten years, it has remained almost stationary. Why? Because the vast majority of the susceptibles are exposed at a time when such exposure is not suspected. With the introduction of immunization of all infants by means of toxin-antitoxin mixtures, diphtheria will probably be really controlled.

The isolation of the measles virus, its identification and its growth in pure culture are not essential for successful immunization (compare with vaccination against smallpox). We know positively that the nasal mucus in a certain stage of the disease contains the infectious material in an active form. In the method of immunization which I have employed, I have utilized the fact that infants under 5 months of age whose mothers have had measles are relatively immune to the disease. This makes it unnecessary to attenuate the virus, which I believe is a distinct advantage, because such attenuation would probably render its immunizing effect less certain. By inoculation, the temporary relative immunity is converted into an immunity which lasts at least for the first few years, that is, during the period when the disease is most dangerous.

CHARLES HERRMAN, M.D., New York.

MOTION PICTURES OF OBSTETRIC PROCEDURES

To the Editor:—Recently our medical society gave an exhibition of some moving pictures illustrating normal and abnormal labor, or rather labor with the child in various positions both of the vertex and breech. Some of the cases illustrated the application of the forceps. In one case the child's head was perforated, the brain broken up and washed out, then a cranioclast applied, and the fetus extracted. If the indication for this barbarous procedure was given on the film, I failed to get it; I did get the impression that it was done merely to show technic. In another case it was performed on the aftercoming head. My criticism is that sufficient information was not given to enable a spectator to judge as to whether the operation was justified or not. So far as I could form an opinion from the picture, it was not justified. Five or six cases of puerperal eclampsia were shown during the spasms. No treatment was indicated, and this part of the "picture" looked as if it had been prepared more for a lay audience than for medical men. In the first obstetric picture, the patient had not been shaved. The preparation for the laparotomy disclosed a number of errors in technic, and the incision for the removal of the ovarian cyst was twice as long as was necessary. Episiotomy was given more prominence than it should have been given, and was done at a period in the labor when it could not be known whether or not the operation would be called for. The incisions for cesarean section extended from the ensiform cartilage to the symphysis, and the uterus was delivered outside the abdomen before it was opened. No one does the operation in this country by that technic any longer, nor would an assistant wearing a long and luxurious growth of beard be allowed near an operating table without a gown and his hair and beard covered. There is no clinic in this country that could not show better obstetric work.

In thinking the matter over, it struck me that it was an effort on the part of Vienna to induce students to come back there for postgraduate work as they did prior to 1914. In talking with our secretary, however, I learn that this is not the case, so far as he knows. At least, he says, his arrangements were made with the Scientific Film Company of Chicago, which concern rents this film to a society for $75, and the society then rents a motion picture house to have it put on. Our total expense was $100.

It is due any other medical body which is planning to put this on to know about what to expect.

BUDD VAN SWERINGEN, M.D., Fort Wayne, Ind.

THE SCARCITY OF PHYSICIANS IN RURAL DISTRICTS

To the Editor:—I have been much interested in reading the articles in regard to lack of physicians in rural communities.

I wonder whether the real cause has been properly stressed. The normal young man starting in the practice of medicine looks forward to a family. He may be able to stand the isolation, hard work and other drawbacks, but, if he has any intelligence at all, he hesitates to place himself in a position in which his children cannot receive a proper education under decent sanitary conditions. The average small town and rural child does not have these advantages.

I believe that the procurement of a sufficient number of properly educated physicians for rural regions depends, as does most other rural progress, on proper public schools for those regions.

CHARLES H. KEENE, M.D., Harrisburg, Pa.
Director, Department of Public Instruction,
Commonwealth of Pennsylvania.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BALANITIS GANGRENOSA AND TROPICAL ULCER

To the Editor:—1. Are "tropical ulcer" and "fourth venereal disease" synonymous terms?

2. Kindly give me some suggestions for treatment of a very extensive ulcerative condition of the skin and soft parts of the shaft of the penis and the region at the base of the penis. This is a chronic inflammatory process of fourteen months' duration. Blood and spinal fluid Wassermann tests are negative. In spite of tests, many injections of arsphenamin have been given with negative results. Likewise, mercury compounds have had no influence on the condition.

3. How should antimony be given in a case of this nature?

4. Have the roentgen rays and radium been used to any good effect in these chronic ulcerative processes?

Kindly omit my name. R. K. C.

ANSWER.—1. Balanitis gangrenosa has sometimes been called the "fourth venereal disease." It is a disease similar to Vincent's angina, apparently being due to a bacillus and spirillum that are found in symbiosis. The organism flourishes only in anaerobic conditions, and it invariably starts in man under a long prepuce. It produces rapid gangrene which may in a few days destroy the glans and the prepuce, and, in some cases, destroys the entire shaft of the penis. The key to its treatment lies in the fact that the organism does not flourish when exposed to oxygen. The parts should be left exposed to the air, and perhaps the best treatment is the constant application of hydrogen peroxid. The brief description which our correspondent gives of the case of chronic ulceration of the penis of fourteen months' duration does not suggest balanitis gangrenosa, but rather suggests the condition of chronic ulceration of the genitals which has heretofore been thought to be in most cases the result of a chancroidal infection. Lately some of these cases in this country have been found to be true tropical ulcers of the pudenda, which is a form of leishmaniasis. It is probable, however, that most of these cases in this country are not that condition, but chronic phagedenic chancroids.

2. The treatment of these chancroids is difficult, and consists of constant surgical attention, in laying open the pockets and trimming off the undermined skin, and other similar surgical applications. The best local applications in such cases are iodoform and argyrol crystals, not powder. Another

method of treating these cases which sometimes succeeds when all other methods fail is the bath in which the patient's body is immersed for a few hours a day in a bath kept at comfortable temperature—that is, one slightly above blood heat.

3. The most effective treatment of tropical ulcer is in the intravenous administration of antimony and potassium-tartrate. This is administered in the form of a 1 per cent. solution, of which 5 c.c. (1⅓ fluidrams), best diluted to 25 c.c. (6¾ fluidrams) is given every second day.

4. Neither of the two conditions considered is due to syphilis, and neither of them is benefited by arsphenamin or mercury administered internally.

The following papers may be consulted:

Goodman, Herman: Ulcerating Granuloma of Pudenda, *Arch. Dermat. & Syph.* **1**:151 (Feb.) 1920.

Aragão, H. de B.: Granuloma Venereum, *New Orleans M. & S. J.* **70**: 369 (Oct.) 1917.

Pardo, V.: Ulcerating Granuloma of Pudenda, *J. Cutan. Dis.* **36**: 206 (April) 1918.

PHYSICIANS AND THE INCOME TAX

To the Editor:—After reading the article on "Physicians and the Income Tax" in THE JOURNAL, February 4, I wish to ask one question: Can money paid for sick and accident insurance be considered as a deductible expense in a physician's return?

R. E. GOLDEN, M.D., Walla Walla, Wash.

ANSWER.—The cost of insurance is a personal and not a business expense, and it is therefore not deductible.

To the Editor:—In THE JOURNAL, February 4, page 373, among those who must file income tax returns you include "all persons . . . even if the exemptions are sufficient to relieve them from paying any tax." In the February 4 issue of the *Literary Digest*, page 66, quoting from a report of the Commissioner of Internal Revenue, David H. Blair on this question writes: "Returns are required of every single person whose net income for 1921 was $1,000 or over, every married person not living with husband or wife whose net income was $1,000, and every married person living with husband or wife whose net income was $2,000 or over." If the *Digest's* statement is correct it would probably save thousands of physicians in the country the trouble of making out reports; and as this corresponds to a personal letter written to me by the collector for Colorado, I take the liberty of calling your attention to it and ask that you answer through THE JOURNAL.

EMANUEL STUVER, M.D., Fort Collins, Colo.

To the Editor:—In THE JOURNAL, February 4, you say, on page 373, that all must make returns whose net income for 1921 amounts to $1,000; but I find in the new forms no statement that would lead me to think a married man supporting wife and children should make returns unless his net income is $2,000.

GEORGE D. CARNES, M.D., South Haven, Mich.

ANSWER.—The instructions for individual returns provide that every citizen and every person residing in the United States whose income for 1921 amounted to $5,000 or whose net income amounted to $1,000, if single, or $2,000, if married, must file an income tax return.

BIO-CHEMIC LABORATORIES PRODUCTS

To the Editor:—Will you kindly report on the enclosed preparations, and oblige. L. A. FRARY, M.D., Los Gatos, Calif.

ANSWER.—Accompanying this inquiry were three pieces of advertising matter put out by the "Bio-Chemic Laboratories" of Chicago and Los Angeles.

1. "Salvarsan and Mercury without the Needle!" In this pamphlet the firm recommends the use of "Salv-Absorbs" and "Merc-Absorbs," which are said to represent preparations for the rectal administration of arsphenamin and mercury, respectively.

2. "Something New in Glandular Therapy—Caplets." This circular declares that "Caplets make possible the preparation of any desired pluriglandular combinations in your own office. . . . Your office girl can make them up for you."

3. "Why Gland Transplantation?" A circular devoted to "Orch-Absorbs" which is said to be "a preparation of interstitial glands for *intra-rectal* administration."

The Bio-Chemic Laboratories has not requested an examination of its proprietaries by the Council on Pharmacy and Chemistry, nor has the Association's Chemical Laboratory or THE JOURNAL investigated any of them. The Council on Pharmacy and Chemistry, however, has published a report on another proprietary form of administering arsphenamin by rectum. This brings out the lack of evidence for the efficacy of this method of arsphenamin administration. The pluriglandular "Caplet" medication is a form of shot-gun therapy that has been the subject of a report by the Council on Pharmacy and Chemistry ("Pluriglandular Mixtures," THE JOURNAL, Jan. 18, 1919), and has been discussed editorially ("Disappointments of Endocrinology," THE JOURNAL, June 11, 1921, p. 1625).

TREATMENT OF DIPHTHERIA—REACTION TO SERUM AND TO ANTITOXIN

To the Editor:—1. What is the best method of treatment of a case of pharyngeal diphtheria in which the patient reacts badly to a trial injection of a few minims of antitoxin?

2. Approximately what percentage of asthmatics react to antitoxin with serum disease or anaphylactic shock?

3. Is not one type of serum as liable to produce anaphylaxis as another, e. g., tetanus or diphtheria antitoxin or plain horse serum?

4. Then in a case in which antitoxin has been previously administered, regardless of the type, is it not quite advisable to test the patient's susceptibility before administering a prophylactic dose of tetanus antitoxin?

5. How long, on the average, does sensitization last?

6. What is the most effective treatment of carriers of diphtheria bacilli?

7. A patient, having been given diphtheria antitoxin, has no reaction. Two years later, three days after taking the diphtheria antitoxin, he has a typical serum sickness accompanied by intense edema, urticaria, etc. What are the possibilities which may follow a third dose given a year or two later; will the sensitization increase and produce an immediate shock, or will it diminish in intensity? Or will it merely reproduce the serum sickness as before?

8. Granted that the reaction occurs because of the serum itself and not the antitoxin, is the cause to be found in the fact that less care is used in the preparation of one set of antitoxin than in another? Is it the experience of practitioners in general that a lesser number of unfavorable reactions occur after the use of antitoxin put up by well known pharmaceutical firms, than after the use of that distributed by the state department?

Please omit my name. V. W., New York.

ANSWER.—1. In mild cases of diphtheria, especially in older patients, local treatment as employed in preantitoxin days may be sufficient. Usually very small doses of serum may be given, and by gradually increasing doses at short intervals, the desired amount may be administered. Gradual entrance of the serum into the blood may be secured by injecting it subcutaneously, well diluted with physiologic sodium chlorid solution.

2. It is impossible to state.

3. Yes.

4. Yes.

5. It may last many years.

6. Removal of the abnormal local condition which allows the bacilli to persist, such as diseased tonsils (large or small), chronic nasal sinusitis, hypertrophied adenoids, or foreign bodies in the nose.

7. No prophecy can be made as to what will occur. There may or may not be a reaction.

8. Virtually all the diphtheria antitoxin serum now produced is treated by a process of chemical precipitation, much of the protein content being thus removed and the antitoxin being retained in solutions with globulins. Different preparations might vary in the completeness with which the "purification" is carried out. They will also vary in their antitoxic content per cubic centimeter, and so in the quantity which holds a certain number of units. There seems to be no reason why unfavorable reactions should occur when the antitoxin distributed by state departments is used over those which occur with antitoxin distributed by commercial firms. In fact, most of the state board antitoxin is purchased from private manufacturers.

"THE RELATION BETWEEN TUMORS IN PLANTS AND IN ANIMALS"

To the Editor:—In the editorial (THE JOURNAL, Jan. 14, 1922, p. 112) on "The Relation Between Tumors in Plants and in Animals," it is stated in the second paragraph that "Jensen . . . in 1910 discussed the resemblance to mouse cancer of tumorous growths in *turnips*" (italics mine). Can you give me this reference? I think you must mean beets instead of turnips. I was in Jensen's laboratory in the fall of 1910, and he showed me some beautiful tumors in beets: yellow tumors produced in red beets and red tumors in yellow beets. He had presented a paper on these tumors at a meeting that spring or summer, I do not remember which. Possibly you got your information from a report of this meeting. CHARLES B. MORREY, M.D., Columbus, Ohio.

ANSWER.—Our correspondent's suggestion is probably correct, the error being due to the ambiguity of the Teutonic speech. Blumenthal in his review of Jensen's work used the word "rüben." Generally when beets are meant the Germans specify "rote rüben." The dictionaries give the equivalent of "rübe" as "turnip." Blumenthal himself speaks of working with "rote rübe," whereas in speaking of Jensen's work, he uses only "rübe," and reference to Jensen's original work indicated that he worked with beets and not with turnips.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 7. Sec., Dr. Harry C. De Vighne, Juneau.
ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
CONNECTICUT: Hartford, March 14-15. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.
CONNECTICUT: New Haven, March 14. Sec., Eclec. Bd., Dr. James E. Hair, 730 State St., Bridgeport. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
DISTRICT OF COLUMBIA: Washington, April 11. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.
HAWAII: Honolulu, April 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.
IDAHO: Boise, April 4. Director, Mr. Paul Davis, Boise.
IOWA: Des Moines, March 21-23. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.
MAINE: Portland, March 14-15. Sec., Dr. Frank W. Searle, 775 Congress St., Portland.
MASSACHUSETTS: Boston, March 14-16. Sec., Dr. Samuel H. Calderwood, State House, Boston.
MINNESOTA: Minneapolis, April 4-6. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.
MONTANA: Helena, April 4. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.
NEW MEXICO: Santa Fe, April 10-11. Sec., Dr. R. E. McBride, Las Cruces.
OKLAHOMA: Oklahoma City, April 11-12. Sec., Dr. J. M. Byrum, Shawnee.
RHODE ISLAND: Providence, April 6-7. Sec., Dr. Byron U. Richards, State House, Providence.
UTAH: Salt Lake City, April 4. Director, Mr. J. T. Hammond, Salt Lake City.

MEDICAL CASE RECORDING IN HOSPITALS*

E. H. LEWINSKI-CORWIN, PH.D.
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NEW YORK

In connection with the dispensary study of two years ago, the Public Health Committee of the New York Academy of Medicine devised a method of rating medical efficiency in an objective way, on the basis of case records, the theory being that the case record contains, or at least should contain, a clinical picture of the case plus such facts about the personal and family history of the patient as bear on his present condition, and such diagnostic, therapeutic and other notes as are necessary for the proper understanding of the case and the future reference. For, otherwise, why is a record? Why has it been introduced?

The same method was pursued in the study of hospital efficiency. Accordingly, several thousand case records were critically scrutinized in accordance with a standard method carefully devised. It may be granted that an analysis of records does not give a fully adequate portrayal of the work, because, under prevailing conditions of inexcusable laxity, a great many things are omitted from the record which should be there, and the work done for the patient is probably of a higher grade than is indicated by the record. Careful case recording is not only admittedly necessary for diagnostic purposes, but it is essential for the training of the powers of observation of interns, who are students, and for future reference. Otherwise, no records would have been kept. They ae either needed or not needed, and if needed, all data of any significance should be entered on them.

How is the workaday medical experience in our hospitals reflected in the light of an objective, dispassionate study of records? In many instances, the recording by the intern is either not supervised at all or is inadequately supervised. There is a certain amount of supervision on the part of the lay file clerk, who sometimes sends a history back to the ward because of so many glaring omissions. The various diagnostic procedures are often neither dated nor signed. Instances are rare when it is easy to find out whether the provisional diagnosis by the intern was made on the first, second or third day after admission, an important fact to know, at least from an administrative point of view. The bedside notes seldom give a complete picture of the case. There is likewise hardly ever a note as to the condition of the patient on discharge, and the notes are rarely dictated by the visiting physician and, therefore, their value for scientific purposes is correspondingly diminished. On the records of operations, the anesthesia, pulse or blood pressure charts are seldom completely filled in. The descriptions of the operations are so brief as to be considered worthless in many instances. On one of the records there was found the following laconic account by an intern: "Operation performed with alacrity, dexterity and celerity." Sometimes the postoperative notes are missing, as is the pathologist's report. The laboratory work is often recorded in a fragmentary manner. The physician's orders covering the medication and diet are seldom found with the records. In case of consultations, the results of the examination are not always noted, nor are the findings of postmortems. Sometimes the necropsy report reaches the record room months after the necropsy has been performed. The final diagnosis is in many instances left unchanged after the necropsy has shown it to be erroneous. The case histories are usually filed in bound volumes and stored away in inaccessible places and seldom utilized.

The record room is in many instances too small for comfortable study. The cross index file is inadequate in most cases, and in some hospitals there is none at all. The nomenclature varies from institution to institution. The private patient records are worse than the ward records. In some of the hospitals, no records of the private patients are required for the central file, thus making the relationship of the patient to the hospital purely that of a hotel, although one of the modest requirements of the American College of Surgeons is that these records be a part of the hospital system the same as any other record.

Of only a few hospitals in this city can it be said that the records, nomenclature, filing, cross indexing and availability make them of perfect scientific value, immediate and future. In one hospital of very high standard the nomenclature used is so indefinite and all embracing that from a scientific standpoint it weakens otherwise good endeavor. In another of the well known special hospitals, the disease classification is almost entirely based on symptoms.

Now, it may be that there are numerous instances of cases in which the symptomatology and the course of the disease are so typical that there is not need of minutiae in recording; or the hospital may be of a type not aspiring to scientific distinction; a revision of procedure is, therefore, in order. In these cases a considerable saving in the time of physicians, nurses and clerks, as well as expense for paper and filing, can be effected by limiting the case record to a single card which would bring together in compact form the fragments now widely scattered through the several sheets composing an average hospital case record.

ABSTRACT OF DISCUSSION

DR. GEORGE B. WALLACE, New York: In this extensive study of New York hospitals, made by Dr. Corwin and his associates, one of the features looked into was the data concerning the immediate care of the individual patient. Inquiry was directed to the recorded facts brought out in establishing the diagnosis—that is, the history and the physical and laboratory examinations—the course of the disease or injury, the treatment, and the condition of the patient at the time of

* From the summary of study by the Public Health Committee of the New York Academy of Medicine of Hospital Conditions in New York City.

discharge from the hospital. It was assumed that such an inquiry would give not an absolute but still a fairly definite idea of the character of the medical work done in the hospital.

As might be expected, the inquiry showed the most marked variation in the matter of patients' records. At the one extreme the record consisted of a filling out of the printed headings on the record sheet and practically nothing else but the nurse's notes. At the other extreme, the record contained the minute and detailed data that one associates with the accurate recording of facts in an experimental research. The records of the first type were almost useless except for the purpose of compiling the annual hospital reports, and those of the second type represented an amount of work not practicable in the ordinary hospital with its limited staff. Obviously, some mean between these extremes should be selected as a working basis.

If we consider the purpose in keeping a record for each patient, and the value of such a record, two points present themselves. The first has to do with the welfare of the patient. Certain procedures, such as the obtaining of a proper history, a thorough physical examination, and certain laboratory examinations, are necessary for a diagnosis, using this term in the broadest sense. Subsequent examinations are equally necessary for a knowledge of the course of the disease. In some hospitals, such facts as are necessary for an understanding of the case are either not recorded or are recorded only in part. For example, one record gave the diagnosis typhoid fever, with no statement of the presence or absence of an enlarged spleen or rose spots, no mention of a Widal test or of a blood or other culture. Another, containing the diagnosis chronic nephritis, had no urine examination recorded. Many similar examples could be cited. These omissions do not, of course, prove that the necessary examinations have not been made, but it is manifestly impossible for any one to carry accurately in his memory the history and the findings in each patient in a ward. Again, without a record, the following of the course of the disease and the recognition of complications becomes much more difficult. Further, in many hospitals there are sudden shifts in the staffs, and the newcomers, with inadequate past records to guide them, are often quite at sea regarding any particular case. In order to avoid mistakes, therefore, to be able quickly to refresh the memory on any question arising, a written record is indispensable.

The acceptance of a hospital appointment carries with it an obligation of the physician to do all he can for the welfare of the patients under his charge. Since the keeping of a proper record has a great deal to do with the patient's welfare, it becomes a duty to see that the proper record is kept. Failure to perform this duty renders the hospital open to the criticism that the medical work is not well done; and since so many hospitals are dependent on private contributions for their maintenance, it may well follow that discriminating donors will hesitate to make contributions to such a hospital.

The second point has to do with a further value of the record, namely, its educational value. An accurate recording of clinical facts instils a spirit of carefulness and thoroughness on the part of the recorder. There is another aspect. The advance of clinical knowledge is not dependent solely on laboratory research work. Our knowledge of disease is based largely on the careful observation of patients. This knowledge is far from complete. It is a function, or rather an obligation, of hospitals, with their wealth of clinical material, to add to it. One way of doing this might be to render the ward more accessible to those who wish to study certain diseases. Certainly, one way is to keep case records which are sufficiently comprehensive to have the desired facts clearly set forth. I think it is obvious that there can be no standard record for all hospitals and for all patients. Speaking generally, there is, however, this minimum requirement: (1) Every record should contain all the facts necessary for a diagnosis; here is included a complete history and physical examination, the latter showing not only what is abnormal but also what is normal, together with certain routine laboratory examinations, such as of the urine and blood. (2) Bedside notes should be taken describing the progress of the case and a full account of any complications or unusual features arising. (3) There should be an adequate statement of the therapeutic measures applied. (4) The nurse should take notes on pulse, temperature, etc. (5) Finally, there should be a statement of the condition of the patient on discharge, based either on the recorded facts or on a final general examination. With this minimum established, there is no limit to the additions that may be made in cases that are being especially studied. What should be kept in mind is that the record is to be made available for future study by some one who has never seen the patient, and who wants all the facts brought out concerning him. The conclusion is inevitable that poor records mean that the medical work is not first class.

In Bellevue we frequently encounter patients who show scars of previous operations, who give histories of definite illnesses or injuries, who tell of having had blood examinations or injections made. On inquiry it is often found that the patient is totally ignorant of what the operation was for or what was found, of what the illness was, or what the blood test showed. In the study of dispensaries made some years ago, there was shown a very small book, slipping easily into a vest pocket, which each patient in one of the dispensaries was given. This little book, which was to be carried or kept by the patient, contained very brief statements, over a physician's signature, concerning the complaint from which the patient suffered. It is worth considering whether it would not be advantageous for hospitals to see to it that each patient on discharge has some such similar book containing the proper entries. If this system became general, it would result in time in a large number of patients having an accurate record of their past medical history.

ADDITIONAL HOSPITALS APPROVED FOR INTERN TRAINING

Since the publication of the list of Hospitals Approved for Internships in the 1921 edition of the American Medical Directory and the supplementary list in THE JOURNAL of October 1, the following institutions have been added:

Section I: General Hospitals:
Alameda County Hospital, San Leandro, Calif.
Mount Sinai Hospital, Chicago.
Swedish Covenant Hospital, Chicago.
Iowa Lutheran Hospital, Des Moines, Iowa.
Highland Park General Hospital, Highland Park, Mich.
Clearfield Hospital, Clearfield, Pa.
Hamot Hospital, Erie, Pa.
Section III: Special Hospitals:
Cleveland Maternity Hospital, Cleveland.

California October Examination

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports the oral and written examination held at Sacramento, Oct. 17-20, 1921. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 38 candidates who took the physicians' and surgeons' examination, 29, including 4 osteopaths, passed, and 9, including 3 osteopaths, failed. One candidate took the drugless practitioners' examination and failed. One candidate took the osteopathic examination and failed. Six candidates took the examination for chiropody and passed. Ninety candidates were licensed, and 5 candidates were refused licenses by reciprocity. Two candidates were licensed on government credentials. Three candidates received osteopathic certificates by reciprocity. Four candidates received drugless certificates by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Medical Evangelists		(1920)	88.2
College of Physicians and Surgeons, Los Angeles		(1920)	76.5
Leland Stanford Junior University		(1921)	85.2, 86.5
Northwestern University		(1920) 78.1, 82.4, (1921)	83, 85.5, 86.7
Rush Medical College		(1919) 86.1, (1921)	83.8
State University of Iowa College of Medicine		(1920)	78.1
University of Kansas School of Medicine		(1917)	83.7
University of Maryland		(1921)	75
University of Minnesota Medical School		(1921)	82
Washington University		(1921)	83
John A. Creighton Medical College		(1916)	79.2
Syracuse University		(1920)	88
University of Buffalo		(1920)	75.2
University of Cincinnati College of Medicine		(1921)	75, 83.5

University of Pennsylvania	(1916)	89.4
McGill University	(1899)	79.7
University of Jena	(1899)*	82
University of Budapest	(1916)*	76.2
Osteopaths		75, 77.3, 78, 78.8

FAILED

College of Physicians and Surgeons, Los Angeles	(1920)	68.9
College of Physicians and Surgeons, San Francisco	(1918)	63.8
University of Cincinnati College of Medicine	(1921)	38.9
Aichi Prefecture Special Medical School	(1908)*	54.8
Chiba Special Medical School	(1918)*	53.8
Kyushu Imperial University	(1913)*	65.7
Osteopaths		67.9, 68.8, 69.7

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Denver and Gross College of Medicine		(1910)	Colorado
Georgetown University		(1904)	Dist. Colum.
Medical Department of Columbian University		(1899)	Dist. Colum.
Atlanta College of Physicians and Surgeons		(1901)	Georgia, Missouri
Chicago College of Medicine and Surgery		(1908)	Montana
Chicago Homeopathic Medical College		(1899)	S. Dakota
College of Physicians and Surgeons, Chicago (1903) Washington		(1890)	Illinois
Hahnemann Medical College and Hospital of Chicago		(1911)	Illinois
National Medical University, Chicago		(1899)	Missouri
Northwestern University (1901), (1910) Washington		(1882), (1906)	Illinois
Rush Medical College (1900), (1907), Illinois, (1911) Iowa, Wisconsin		(1894) Michigan, (1897)	Iowa
Indiana University		(1919)	Indiana
Medical College of Indiana		(1902)	Indiana
Keokuk Medical College		(1895)	Illinois
Keokuk Medical College, College of Phys. and Surgs.		(1905)	Iowa
State University of Iowa College of Medicine		(1902)	Minnesota
State University of Iowa College of Homeo. Med. (1905) South Dakota		(1903)	Iowa
Kansas City Medical College		(1898)	Iowa
Kansas Medical College, Topeka		(1906)	Kansas
University of Kansas School of Medicine		(1917)	Kansas
Kentucky University Medical Department		(1901)	Kentucky
Louisville and Hospital Medical College		(1908)	Montana
University of Louisville Medical Department		(1898)	Indiana
Tulane University		(1916), (1920)	Louisiana
Baltimore Medical College (1908) Maryland		(1896) New Jersey, (1898)	Michigan
Johns Hopkins University		(1915) New York, (1919)	Maryland
University of Maryland		(1902)	Minnesota
College of Physicians and Surgeons, Boston		(1911)	Georgia
Harvard University		(1915)	Missouri
Tufts College Medical School		(1914)	Mass.
University of Michigan Medical School (1904) Arizona, (1907) Michigan		(1900)	Mass.
University of Michigan Homeopathic Medical School		(1904)	New York
Univ. of Minnesota Med. School		(1907), (1914), (1920)	Minnesota
Barnes Medical College		(1908)	Illinois
Beaumont Hospital Medical College		(1892)	Missouri
National University of Arts and Sciences		(1918)	Missouri
St. Louis University School of Medicine (1918) Missouri		(1906)	Illinois
University Med. College of Kansas City, Mo.		(1908), (1909)	Kansas
John A. Creighton Medical College		(1912)	Nebraska
Albany Medical College		(1909)	Connecticut
Bellevue Hospital Medical College		(1896)	Washington
Columbia Univ (1910)		(1895) Michigan, (1904) Illinois, (1905)	New York
Cornell University		(1910)	New York
Eclectic Medical College of the City of New York		(1895)	New Hamp.
Long Island College Hospital		(1882)	New York
University and Bellevue Hosp. Med. College		(1907), (1920)	New York
University of Buffalo		(1902)	New York
Ohio State University College of Medicine		(1917)	Ohio
Western Reserve University		(1916)	Washington
Jefferson Medical College (1906) Pennsylvania, Utah, (1908) Utah, (1910) Minnesota, (1914) Montana, Pennsylvania		(1888) Utah, (1902)	Illinois
University of Pennsylvania		(1909)	Penna.
Meharry Medical College		(1884), (1915)	Texas
University of Nashville		(1899)	Kentucky
University of Tennessee		(1915)	Louisiana
University of Texas		(1920)	Texas
Marquette University		(1914)	Wisconsin
Laval University		(1906)	Maine
Queens University		(1902)	Michigan

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
George Washington University		(1916)	U. S. Army
Jefferson Medical College		(1905)	U. S. Navy

* Graduation not verified.

Arkansas November Examination

Dr. Claude E. Laws, secretary, Arkansas Eclectic Board of Medical Examiners, reports the written examination held at Little Rock, Nov. 8-9, 1921. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Bennett College of Eclectic Medicine and Surgery		(1894)	84.3
Kansas City College of Medicine and Surgery		(1921)	89.4

FAILED

Kansas City College of Medicine and Surgery	(1921)	*

* No grade given.

Social and Industrial Medicine

DEFECTIVE VISION AMONG INDUSTRIAL WORKERS

CAREY P. MC CORD, M.D.
AND
DONALD J. LYLE, M.D.
CINCINNATI

The workers of this country are distributed over no less than 8,000 separate and distinct occupations. As a part of the general program of making all work free from health and accident hazards, the greater number of these trades and professions have been carefully investigated to determine eye hazards. The dangers from mechanical injuries, burn, glare and eyestrain are well known to many industries. Satisfactory protective measures have been devised and are in common use. Although the worker's eyes are being protected against the hazards of his job, the reverse is not true; his job is not equally protected against the hazard of poor eyesight. While it is recognized that poor eyesight is of chief significance to the affected individual, from industry's point of view it also is to be recognized that poor eyesight constitutes an economic hazard on account of ruined work materials, low production, high accident frequency, and high absentee rates.

As evidence of the frequency of defective vision among industrial workers and as the basis for a plea of the routine examination of the eyes of all applicants for work, the findings from an examination of the employees of a small textile mill are here recorded.

EYESIGHT AMONG TEXTILE WORKERS

The workers of this plant were engaged in the manufacture of cotton braids. The trade processes involved were such as to require good eyesight to obtain best results. The factory building was found to be well lighted both naturally and artificially. General conditions as to sanitation and safety were excellent. Sixty-two workers were examined, of whom 80 per cent. were women. The average age for both men and women was 39 years.

Although this report is limited to findings as to visual acuity, extended examinations were made of all special sense organs. It is noteworthy that from all persons in whom uncorrected defective vision existed, histories were obtained of repeated headaches, vertigos, gastro-intestinal disturbances, etc., attributable to poor eyesight. Our chief eye findings were:

1. Of the sixty-two persons examined, fifteen persons (24 per cent.) possessed vision of 20/20 or better.

2. The average vision (uncorrected) for the entire plant's personnel (sixty-two) was 20/61.

3. The average vision of all persons (forty-five) working without glasses was 20/34.

4. The average vision for persons (seventeen) wearing glasses at work was 20/36.

5. Eleven persons wearing glasses only for reading purposes at home were engaged at close work with an average vision of 20/55.

6. Twenty-two per cent. of persons working without glasses exhibited only 1/2-vision or less in one or both eyes.

7. Thirty-seven per cent. of all workers not wearing glasses would be distinctly benefited through the wearing of suitable glasses.

8. In those persons (seventeen) already wearing glasses, only four instances were noted wherein the defect was fully corrected. In 33 per cent. of instances, the vision was not at all improved by the glasses that had been supplied to them.

Reduced to the language of the manufacturer, this experience indicates that the work of this factory had been delegated to a group of workers nearly one-half blind. It is believed that this particular factory is not unusual in this respect. The bearing of this on the comfort, the health, the quantity and the accuracy of daily performed work, is patent. The industrial physician, in his dual function of serving the employee and the employer, advances the interests of each through the careful supervision of the eyesight of all workers.

RECOMMENDATIONS

From our general experience in industrial medicine, we are prompted to make these recommendations:

1. Illuminometer measurements of the light provided for the several types of work in the factory; the provision and maintenance of that quantity of light optimal for the individual job; the elimination of glare.

2. The suitable testing of visual acuity of applicants for work, and of all employees at yearly intervals.

3. The referring of all persons exhibiting defects of 20/30 or greater to reliable ophthalmologists for corrections.

4. Selected job placement for all persons having defects of 20/25 or greater, for whom correction is not feasible or obtainable.

5. Payments for services of specialist and optician to be made by the factory management, arrangements being made with employee to deduct small weekly repayments from earnings. This procedure insures prompt remedying of the defect, is usually entirely satisfactory to the employee, and avoids services from incompetent sources.

214 West Seventh Street.

Book Notices

NOUVEAU TRAITÉ DE MÉDECINE. Publié sous la direction de MM. les Professeurs G.-H. Roger, F. Widal, and P.-J. Teissier. Sécretaire de la Rédaction: Marcel Garnier. Fascicule VII: Avitaminoses, Maladies par agents physiques Troubles de la Nutrition. Price, 35 francs, net. Paris: Masson & Cie, 1921.

This volume of the new French System of Medicine contains a discussion of vitamins and avitaminoses, scurvy, pellagra, beriberi, venom poisoning, anaphylaxis, serum sickness, diseases caused by physical agents, and diseases of nutrition. Every subject is interestingly discussed; the interest, however, is evoked as frequently by disagreement or criticism as by agreement with the thoroughly French attitude of most of the articles. We wondered as we read whether science really is international: if science is greater than the boundaries of any country, this volume is, generally speaking, provincial. One misses, except in Roger's first article, any reference to English or American work on the deficiency diseases. No discussion of disturbances of nutrition seems complete without somewhere seeing the names of Rubner, Voit or Graham Lusk; yet the uninformed reader of this volume would conclude that all diabetic research emanated from France. We do not in the least wish to depreciate the value of French contributions; but we believe that modern medicine should reflect the spirit of the age and not of any particular place. Furthermore, the volume has two other defects which are common to other systems recently published. The bibliographic references are most unevenly distributed—in some articles, they are fairly complete, in others noticeable by their absence. Perhaps the war and its effects are responsible for the absence of much of the recent literature; but can the war be responsible for the absence in the pellagra article of any reference to literature published after 1915? The literature of gout is brought up to 1920. It is, of course, impossible to give a detailed review of each of the articles. The French point of view on the arthritic diathesis is thoroughly, if not convincingly expounded, by Le Gendre, whose literary versatility is also given expression in some 330 total pages of discussion of all the troubles and diseases of nutrition! Obesity sounds romantic in these pages, but a searcher for fundamentals will find many gaps. Likewise, in diabetes mellitus, statements are made which are incomplete: for instance (p. 329), "The quantities of sugar found in the blood of diabetics . . . vary greatly . . . between 0.35 and 5.3 gm. per thousand." This surely is true; it is likewise true and of more importance to say that at certain times of the day, or during certain periods of treatment, the diabetic blood sugar may be perfectly normal. The same criticism may well be directed to the discussion of diabetic glycosuria (p. 341), which, according to Le Gendre, "is characterized by its *abundance* and its *constancy*" (italics in the French original). There are, however, some excellent phases of this volume which easily counterbalance the deficiencies pointed out. The clinical discussion throughout is of an unusual quality. The diabetic patient seems better understood than his intermediary metabolism. Clinical differentiations of patients with arthritis, gout and obesity are made which indicate unusual clinical opportunities. Treatment, too, receives a grand share; and it is gratifying to note that there are writers who do not treat the nutritional patient as a test tube chemical reaction.

LOS MECANISMOS DE CORRELACIÓN FISIOLÓGICA, ADAPTACIÓN INTERNA Y UNIFICACIÓN DE FUNCIONES. Por el Augusto Pi Suñer, Catedrático de Fisiología en la Universidad de Barcelona. Paper. Pp. 299. Barcelona: P. Salvat, 1920.

This is a compilation, by a noted Spanish professor and physiologist, of the eighteen lectures given by him in the University of Buenos Aires in 1919, on the physiologic unity and correlation of the organism. He takes up successively the conception of physiologic unity, micellar correlations and intercellular influences, chemical correlations, nervous correlations, internal reflexes, respiratory nerve supply, secretory reflexes, trophic sensitiveness, trophic reflexes, neurochemical correlations, agents involved in nutritive and functional control, metabolic adaptations, tonus and trophism, function and form, individualizing rôle of unification, nervous systematization and psychic individuality, unconsciousness and consciousness, life and knowledge. Supremely familiar with his subject, the author reviews its history from the Renaissance days when physiology was born and Paracelsus set down his hypothesis of an organic ruling principle, to the many recent physiologic investigations, including Pi Suñer's own, which have contributed to our knowledge of physiologic unity. He emphasizes the different points of view of physiologist and physician when approaching this subject, the first tending to pluralism through his study of diverse structural functions, and the latter to unity, as he observes the generalization of pathologic reactions. After considering the many data already available on coordinating mechanisms of the body and the profound solidarity existing in all living forms, the author leans to Baldwin's metaphysical explanation that all living beings are subject to the same laws as the universe as a whole. As a scientist, however, he rebels against this, stating that the duty of physiology is merely to study the mechanisms of coordination and function. The book in a way is a supplement of the author's previous work on "Functional Unity" and will prove interesting to all those engaged in this field.

LA DÉGÉNÉRESCENCE HÉPATO-LENTICULAIRE. Maladie de Wilson—Pseudo-Sclérose. Par H. C. Hall, Ancien Chef de clinique à l' "Hôpital de Bispebjærg", Copenhague. Préface du Professeur Pierre Marie. Paper. Price, 20 francs, net. Pp. 361, with 44 illustrations. Paris: Masson et Cie, 1921.

This is the most complete exposition of progressive lenticular degeneration (Wilson's disease) that has appeared. The literature is fully reviewed and the author adds a number of personal cases, one with complete necropsy and microscopic examination. He believes that Wilson's disease, pseudosclerosis (Westphal-Strümpel) and dystonia musculorum deformans (Oppenheim) probably are all the same disease, differing only quantitatively and from slight differences in location of the morbid process, and proposes to call the group hepatolenticular degeneration.

Medicolegal

Injunction Against Retired Physician Refused

(Oates et al. v. Leonard (Ia.), 183 N. W. R. 462)

The Supreme Court of Iowa says that the defendant, who was conducting a small hospital and enjoyed a good practice in the town where he was located and in the surrounding country, in November, 1917, sold his business, including his hospital and good will, to the plaintiffs, and agreed in the written contract not to engage again in the practice of medicine or surgery in said town or surrounding country for a period of ten years. Thereafter, the defendant moved to his farm, some two or three miles from the town, and carried on the farm. He did not maintain an office or drug store after the execution of the contract. The contract was carried out in all respects, except that the plaintiffs contended that the defendant continued to attend women in childbirth and to write prescriptions for people in the territory surrounding the town; wherefore they asked that he be enjoined from practicing medicine. The defendant, answering, denied that he had violated the contract; denied that he had injured and wilfully made inroads into the professional practice and business of the plaintiffs; and denied that unless he was enjoined he would cause them loss or injury. He alleged the fact to be that he treated only emergency cases which had arisen during the absence of the practicing physicians in the community, or attended emergency cases which the resident physicians refused or were unable to treat; that the only cases in which he had appeared or acted as a physician or prescribed for patients were those in which the interest of humanity and the health of the public so demanded.

For the most part, the cases were attended and the prescriptions were given shortly after the defendant sold his practice. Some of the prescriptions were written without expectation of pay therefor. The plaintiffs contended that, if the defendant should prescribe and practice without making any charges, it would be the keenest kind of competition for them. This might be so under some circumstances. On the other hand, if such persons were indigent, as the evidence tended to show some of them were, there would be no prejudice in a financial way to the plaintiffs. One of the cases treated by the defendant was a person who was on a black list, whom the plaintiffs would not be required to treat, and, as the court understands the record, they would not have treated. In some of the childbirth cases complained of, women, after their pregnancy, and before the defendant sold out, had engaged the defendant, who had been their physician, to attend them. It was true, as contended by the plaintiffs, that no reservation was made in the contract of such cases; but the parties would not have gone to the plaintiffs in any event, at least some of them. Of cases treated by the defendant, twelve were complained of, mostly confinement cases. In some, if not all, of the confinement cases, he attempted to get them to employ the plaintiffs, but they insisted on his carrying out the agreement he had made with them. In other cases, he had treated the patients before and he testified that, according to the ethics of the medical profession, when a physician has once treated a case, he ought to carry it through. In one case, he refused to go, and told them to get somebody else, when in an hour he was called again and told that nobody else could be got, that all were busy with the flu. Of prescriptions, he wrote about 120 in three and one-half years after the contract was made, the most of them in the first year, only three of them being written in 1919, and the last one in February, 1920.

In affirming a judgment for the defendant and dismissing the plaintiff's petition, the supreme court holds that the contract involved was legal, but that under the entire record the equities were with the defendant. The court is not prepared to say that under such a contract a physician should be enjoined, as for a violation of the contract, when he acts in a emergency, and when another physician cannot be secured. It might be that, strictly speaking, all the transactions shown were not of that character, but for the most part they occurred shortly after the defendant's retirement, and naturally patients would be more insistent at that time than they would later, and the transactions would grow less as time passed, while for the most part the transactions occurred a considerable time before this suit was brought, and it was apparent at the time of the trial that the defendant was not claiming the right to practice medicine.

No Malpractice in Treatment of Knee and Abscesses

(Hanson v. Harris (S. D.), 184 N. W. R. 262)

The Supreme Court of South Dakota, in reversing a judgment rendered for the plaintiff for damages for alleged malpractice, says that a wagon wheel ran over his right knee. A physician was called, but the knee soon became badly swollen, inflamed, and very painful. About two weeks after the injury the defendant was asked to treat the case. The defendant had a hospital, and had the plaintiff removed to it. The plaintiff had considerable fever. The defendant opened the knee joint and found a large cavity filled with thin seropurulent pus. The cavity extended 5 inches (12.5 cm.) above the knee, and a number of abscesses containing pus had formed about the knee. The defendant made four incisions, drained and cleaned out the abscesses, and applied the proper drainage and irrigation. He inserted his finger through the incision into the cavity of the knee and found that there was no fracture of any of the bones; but the joint was badly infected and the bone had become infected to some extent. The swelling and the temperature went down, and about ten days or two weeks after the plaintiff entered the hospital, the defendant injected into the joint, abscesses, and pus cavities "Beck's paste," a thin salve composed of one part powdered bismuth and two parts petrolatum. Soon afterward, another abscess formed down on the calf of the leg, but soon healed, after being opened, drained, and irrigated. After he had been at the hospital about five or six weeks, the plaintiff was discharged as cured. His knee was nearly stiff and so bent that, when he stood up, only his toes touched the ground. Eight months later, he went to another hospital, where the knee joint was opened, and necrosis of the bones of the joint, especially of the lower end of the femur, was found. Small quautities of Beck's paste were also found in the joint; and a roentgenogram taken some months later showed that some of the paste still remained in the cavities formed by the abscesses.

After a thorough analysis of the testimony, the court fails to find any facts that warranted the conclusion that the defendant was negligent or unskilful in his treatment of the plaintiff's injury, or that any other course of treatment known to the medical profession would have produced better results. The plaintiff had suffered much pain, and no doubt would continue to suffer great pain, and much inconvenience from the condition of his leg. No doubt his condition appealed strongly to the sympathies of the jury, as it certainly did to the sympathies of this court; but that did not justify a verdict against the defendant. The mere fact that the plaintiff's limb was not restored to its natural condition and usefulness did not prove, nor even imply, that the defendant was negligent or unskilful. Physicians and surgeons are not to be held for results, but only for the kind of service rendered by them.

The purpose of taking a roentgenogram of an injury being to ascertain facts not otherwise ascertainable, and the only fact that it was contended could have been ascertained in this case by taking one being whether there was any fracture, the defendant was not negligent in not taking a roentgenogram at the time of his first treatment, as it was wholly unnecessary for the purpose of ascertaining whether there was a fracture, because the defendant had opened the joint, inserted his finger, and ascertained that there was no broken bone. It was argued that the use of Beck's paste was unnecessary, and under the circumstances was improper treatment, on the theory that the paste was intended to be applied to, and could properly be used only in cases of chronic or tubercular abscesses, while the abscesses in this case were acute ones. But the defendant appeared to have used the paste in the exercise of his best judgment that it was necessary to hasten the healing of the abscesses about the knee. Nor does the

court agree with the contention that the defendant should have kept the leg in splints, on the theory that the knee would be entirely stiff, and that it would be better to have it straight than bent. There was a splint on the leg for some time, but the defendant believed that the knee joint would not be entirely stiff after it healed, and the splint was removed.

Misrepresenting Condition Does Not Preclude Compensation —Evidence from Conjoint Case

(Kelty v. Fisher et al. (Ore.), 199 Pac. R. 188)

The Supreme Court of Oregon says that Dr. Kelty was sent for by one Clay Fisher to treat his brother, Johnnie B. Fisher, and his half-brother, George M. Syron, who had influenza. Both patients died. The physician presented to the administrators of the estate of each a claim for medical services, and finally got a judgment in each case for $175, from which the administrators appealed. The case here before the supreme court was that of the claim against the Fisher estate. The administrators asked that the jury be instructed:

"It is the duty of a physician to disclose to the relatives of a patient who employ him to treat the case, when called on by such relatives to state to them the true condition of the patient, full, accurate, and complete information as to the condition of the patient. If he should fail in this duty, and should inform such relatives that the patient was not in a dangerous or serious condition, when in fact and in truth such patient was in a dangerous and serious condition, the physician would be guilty of such carelessness and negligence as to preclude him from receiving any pay for his services in case of the death of the patient. If you should believe in this case, from a preponderance of the evidence, that Dr. Kelty informed Clay Fisher, and led him to believe, that the patients, Johnnie B. Fisher and George W. Syron, were not dangerously sick, that there was no occasion for getting another doctor, and that he would be able to get them up from their sickness, when in truth and in fact they were in a dangerous condition, and he knew and considered them in a dangerous condition at the time such representations were made, then and in that event he would not be entitled to any fee whatever, and it would be your duty to return a verdict for the appellants."

The trial court refused to give that instruction, and the supreme court says that the mere reading of the requested instruction demonstrated the correctness of the view taken by the trial court. If the court had submitted the requested instruction to the jury, they would have been required to return a verdict for the administrators, if they found merely that the physician believed the two patients were dangerously sick, and, so believing, told Clay Fisher that the two men were not dangerously sick; and the jury would have been required so to find for the administrators even though they might also have found that the physician exercised the very highest degree of care and skill in the treatment of the patients, and even though it was impossible to have done more than was done for them.

The supreme court, however, reverses the judgment in this case and remands the cause for a new trial on the ground that the administrators were entitled to show the facts and circumstances attending the Syron case, and it was prejudicial error to refuse the evidence which the administrators offered concerning the treatment of Syron and the symptoms manifested by him, the two cases being so intimately connected as practically to constitute one case, or, on the authority of some precedents, to make the medical treatment given to Syron and the symptoms manifested by him a part of the res gestae, or essential circumstances, of the Fisher case. Therefore, when the administrators contended that the physician gave to Johnnie B. Fisher a hypodermic injection of morphin, whch caused the death of the patient, while the physician insisted that if he gave a hypodermc injection of any medicine at all it was of camphorated oil, a heart stimulant, it was competent for the administrators to show, if such were the facts, that the symptoms manifested by Syron were exactly like those manifested by Johnnie B. Fisher, and that the physician stated before giving a hypodermic injection to Syron that he was going to give him morphin.

Death of Physician from Septicemia After Injury

(Rorabaugh v. Great Eastern Casualty Co. (Wash.), 200 Pac. R. 587)

The Supreme Court of Washington, in affirming a judgment for $1,560 in favor of the plaintiff as the beneficiary of a policy of accident and sickness indemnity, says that the insured was a practicing physician and surgeon. On the fifth day of the month of his death, he performed a surgical operation on one of his patients. On the afternoon of the 6th he examined and dressed the wound resulting from the operation. Within a very few hours thereafter, while moving an old and rusty bed spring, he slightly cut one of his fingers by coming in contact with the end of one of the wires. During the following day, the 7th, he complained of not being well, and of having considerable pain in his right arm. His condition continued to grow worse, until on the 9th he was required to take to his bed, where he remained until his death, about a week afterward. He died of septicemia. Prior to the cutting or scratching of his finger, he was in the best of health. The testimony of the experts and others was strongly to the effect that the inoculation of his finger with the germs which caused the blood poisoning was coincident with the cutting of the finger, and the jury returned a special verdict so finding. The defendant contended that there was not sufficient testimony concerning the cause of the death of the insured to justify the case being sent to the jury, but the court is unable to see on what ground that contention could stand. A number of witnesses testified that the immediate cause of death was blood poisoning, and the immediate cause of the blood poisoning was the cut on the finger, and that the cutting of the finger and its inoculation were simultaneous. Under the evidence, the direct cause of death (within the terms of the policy) was the injury to the finger. The testimony clearly showed that the death was caused "directly, solely, and independently of all other causes by external, violent, and accidental means," and was not caused "wholly or in part, directly or indirectly, by any disease, defect or infirmity." A special provision of the policy was that, in the event of death resulting from any of the following causes, the company's liability should be one month's indemnity: injuries intentionally inflicted on the insured by any other person; unnecessary exposure to danger, riot, strike or evading arrest; gas vapor or poison; contact with poisonous substances, blood poisoning, or septicemia, or due partly to injury and partly to disease or bodily infirmity. The court, however, is of the opinion that that provision had reference solely to death resulting from the causes therein mentioned, including blood poisoning or septicemia, and did not apply to an injury caused directly, solely, and independently of all other causes by external, violent and accidental means. Here the death was the direct result of the injury to the insured's finger, and not the direct result of blood poisoning. Furthermore said provision had to do only with indemnity concerning loss of time, and was not consistent with the indemnity to be paid in the event of death directly resulting from external, violent, and accidental means. In construing that portion of the policy which provided insurance against bodily injury caused by external, violent, and accidental means, "and which shall from the date of the accident result in continuous disability," the court holds that the policy evidently did not mean that there must be a disability from the very moment of injury, because in an injury of the character here involved that would be impossible. There was in this case a disability within the fair meaning and construction of the quoted words.

Society Proceedings

COMING MEETINGS

Conference on Medical Education, Hospitals and Public Health, American Medical Association, Chicago, March 6-10.

Louisiana State Medical Society, Alexandria, April 11-13. Dr. P. T. Talbot, 1551 Canal St., New Orleans, Secretary.

Tennessee State Medical Association, Memphis, April 11-13. Dr. Olin West, 327 Seventh Avenue, N., Nashville, Secretary.

South Carolina Medical Association, Rock Hill, April 18-19. Dr. Edgar A. Hines, Seneca, Secretary.

New York, Medical Society of the State of, Albany, April 18. Dr. E. L. Hunt, 17 W. 43d St., New York, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

February, 1922, **23**, No. 2

*Is There More than One Kind of Rickets? P. G. Shipley, E. A. Park, E. V. McCollum and N. Simmonds, Baltimore.—p. 91.
*Value of Routine Use of Colloidal Gold Reaction in Acute Epidemic Poliomyelitis. J. C. Regan and H. Cheney, New York.—p. 107.
*Clinical Value of Intraperitoneal Injections of Salt Solution. J. C. Gittings and J. D. Donnelly, Philadelphia.—p. 124.
Hematomas in Heart Valves of Calves. L. Florence, Princeton, N. J.
*Effect of Tonsillectomy on Nutrition in Twelve Hundred Children. A. D. Kaiser, Rochester, N. Y.—p. 139.
*Case of Gangrene of Feet Following Diphtheria. M. B. Gordon and B. Newman, Brooklyn.—p. 142.
Resumé of Literature (1920) on Tuberculosis in Children. M. Michael, Chicago.—p. 146.

Studies in Rickets.—The experiments reported on by Shipley et al make it clear that when the rat is deprived of certain active light rays and an unidentified factor contained in cod liver oil, a pathologic condition corresponding in all fundamental respects to rickets in human beings can be produced through the diet in two ways: (1) by diminishing the phosphorus and supplying the calcium in optimal quantities or in excess, or (2) by reducing the calcium and maintaining the phosphorus at a concentration somewhere near the optimum. The authors believe it to be certain that in the human being, similarly deprived of light and the unidentified factor, it would also be possible to produce true rickets through an adjustment of the calcium and phosphorus of the diet in the two ways mentioned. As the result of their experiments they were led to believe that there are two main kinds of rickets. One is characterized by a normal or nearly normal blood calcium and a low blood phosphorus (low phosphorus rickets) the other by a normal or nearly normal blood phosphorus but a low blood calcium (low calcium rickets). The authors suggest the possibility that there may be a true renal rickets and that the rickets accompanying the alimentary anemias may represent a somewhat different kind of disturbance in metabolism from that which is present in the ordinary forms of the disease.

Value of Colloidal Gold Test in Poliomyelitis.—The colloidal gold test was performed by Regan and Cheney on seventy-four spinal fluids obtained from twenty-one cases of acute epidemic poliomyelitis. The fluids were examined at intervals varying from the fourth to the one hundred and twenty-third day of the disease. The predominant type of the malady was the myelitic with, however, a high proportion of cases presenting symptoms of moderate or marked polyneuritis. The curves obtained have been classified according to the week of the disease in which the spinal fluids were taken. The authors are strongly inclined to believe that there is a relationship between the duration of the positive colloidal gold curve and the acute inflammatory stage of the malady, so that when the reduction of gold chlorid becomes normal, the acute period of the disease is over. If this is so, the reaction should be of value in determining when the rest of the acute period may be terminated, and the more energetic treatment by electricity and massage, etc., of the subacute stage begun. With the gradual subsidence of the colloidal gold curve there is usually a corresponding improvement in the patient's general condition, paralysis and meningeal symptoms. No close relationship was found, except in a general way, between the cytology and chemistry of the spinal fluid and the gold chlorid reaction. As the very acute symptoms subsided, the spinal fluid, in its chemical and cytologic contents, returned to normal. So, in most cases, does the gold chlorid curve return to normal, but more slowly, usually still remaining elevated at a period (eighth week) when no other characteristic pathologic signs are to be found in the cerebrospinal fluid. The average curve in the fatal cases, although showing a tendency to produce greater reduction and to be prolonged slightly into the higher dilutions, did not differ sufficiently from that obtained in the nonfatal cases in the first few weeks as to make the test of value in prognosis. In the few instances in which poliomyelitis may be confused with epidemic encephalitis, the colloidal gold reaction may be of some use in differential diagnosis. To realize the full value of this reaction, it must be taken into consideration with the history, physical findings and other laboratory data.

Intraperitoneal Injection of Salt Solution.—The forced ingestion of water by nasal tube, Gittings and Donnelly believe, deserves a more extensive trial in cases of diarrhea as a preventive, before anhydremia develops, and in conjunction with intraperitoneal injections, as a curative measure. Other routes for the introduction of water rarely will be needed. Intraperitoneal injections should not exceed 300 c.c.; 150 c.c. administered more frequently, if necessary, is a safer procedure for infants weighing less than 4,000 gm. Puncturing the peritoneal cavity seems to be a safe procedure provided the bladder is empty, distention is not extreme and a rigidly aseptic technic is employed. There is need for a reliable clinical measure of the degree of dehydration. The lack of resiliency in the skin and subcutaneous tissues seems to give a reasonably accurate indication, but it should be controlled carefully by tests of the blood volume, blood flow and protein concentration.

Effect of Tonsillectomy on Nutrition.—Among 1,200 children operated on for diseased tonsils and adenoids there was 34 per cent. malnutrition (7 per cent. or more underweight). Reexamination from nine to twelve months later showed a reduction of malnutrition to 15.9 per cent. Kaiser asserts that diseased tonsils and adenoids do not necessarily impair nutrition as evidenced by 66 per cent. of children showing normal weight according to height. Diseased tonsils and adenoids are undoubtedly a factor in malnutrition, as evidenced by the marked improvement in 219 children of the group.

Gangrene of Feet Following Diphtheria.—This case, like others in the literature, occurred in the hypertoxic type of diphtheria in which symptoms of cardiac insufficiency had already developed and after the local throat symptoms had disappeared. The course was the typical one of myocarditis—sluggish circulation, low blood pressure and insufficient collateral circulation. Gordon and Newman find it difficult to state positively whether the condition was due to a local thrombus as the result of a local acute arteritis or to a migrating clot originating in the heart. Surgical intervention was postponed in this case because the authors felt that the child's general condition at the onset was too critical to subject him to any operative procedure. Later, when his condition had improved and the line of demarcation had made its appearance, it was thought best to permit a natural amputation in the hopes of saving a larger portion of his foot. The results amply justified waiting.

American Journal of Hygiene, Baltimore

January, 1922, **2**, No. 1

Investigations on Control of Hookworm Disease. II. Apparatus for Isolating Infective Hookworm Larvae From Soil. W. W. Cort, J. E. Ackert, D. L. Augustine and F. K. Payne, Baltimore.—p. 1.
Id. III. Finding Unsheathed Hookworm Larvae in Soil. W. W. Cort, D. L. Augustine, J. E. Ackert, F. K. Payne and G. C. Payne, Baltimore.—p. 17.
*Id. IV. Relation of Domestic Chicken to Spread of Hookworm Disease. J. E. Ackert, Baltimore.—p. 26.
*Id. V. Domestic Pig and Hookworm Dissemination. J. E. Ackert and F. K. Payne, Baltimore.—p. 39.
*Relation Between Fatigue and Susceptibility of Rats Toward a Toxin and An Infection. E. H. Oppenheimer and R. A. Spaeth, Baltimore.—p. 51.
*Bactericidal Action of Rabbit Bile on Certain Strains of Streptococci. R. L. Stone, Berkeley, Calif.—p. 67.
Results of Hookworm Disease Prophylaxis in Brazil. W. G. Smillie, São Paulo, Brazil.—p. 77.

Chickens Control Hookworm Disease.—The results of a series of experimental feedings made by Ackert indicate that the great majority of hookworm eggs ingested by chickens fail to produce infective hookworm larvae. This failure is attributed, in part, to breaking of eggs in the gizzard, injury from urine in the feces, and to malnutrition of the larvae in the excrement. Dangerous infective spots may be established around drinking receptacles by chickens that have swallowed

hookworm eggs day after day. Hookworm eggs deposited out of doors under conditions unfavorable for development can be carried by chickens to favorable environments. Human stools voided in unfrequented places can be transported by chickens to the door yard which is traversed by barefooted persons. Newly hatched hookworm larvae can pass through the digestive tracts of chickens apparently uninjured. Therefore, chickens are more beneficial than harmful in the control of hookworm disease.

Pigs Disseminate Hookworm Disease.—The results of tests made by Ackert and Payne indicate that a high percentage of the hookworm eggs ingested by pigs are able to produce infective larvae, and that the free-range pig is an important factor in the dissemination of human hookworm eggs.

Fatigue Increases Resistance to Toxin.—Oppenheimer and Spaeth found that fatigue, artificially induced in white and hooded rats by forcing them to run in motor driven drums, apparently tends slightly to increase their resistance to subcutaneous injections of tetanus toxin. This occurrs whether fatigue procedes or follows the injection of the toxin. Fatigue, both preceding and following intraperitoneal injections of Type I pneumococcus, definitely increases the resistance of the white and hooded rats to that infection. These results contradict the popular belief that a fatigued individual is more susceptible to disease (tetanus toxin and pneumococcus infection) than a nonfatigued individual.

Rabbit Bile Bactericidal for Certain Streptococci.—Stone's observations have shown that rabbit bile has a definite bactericidal effect on certain strains of streptococci and is ineffective toward others. The pyogenes group of streptococci is particularly susceptible, all the strains tested (twenty-eight) being killed by rabbit bile. Other varieties of hemolytic streptococci tested (nineteen) were unaffected, except one. There is no bactericidal or inhibitory effect on any of the nonhemolytic streptococci. Some strains of *S. viridans* are killed, others are not affected by rabbit bile. Horse, sheep, beef, dog, cat, turtle, guinea-pig and human bile exert no inhibitory action on any of these strains of streptococci. The other ordinary human pathogens, with the exception of the pneumococcus, are unaffected. The action on streptococci is, however, not lytic. This bactericidal substance in rabbit bile is not absorbed from the bile by the bacteria. It can be used repeatedly. Repeated autoclaving does not diminish this bactericidal power. This bactericidal substance is located in the alcohol soluble, ether insoluble fraction of rabbit bile.

American Journal of Obstetrics and Gynecology, St. Louis

January, 1922, **3**, No. 1

*End Results of Amputation of Cervix and Trachelorrhaphy. R. M. Rawls, New York City.—p. 1.
Diabetes and Pregnancy. J. N. Bell, Detroit.—p. 20.
Heart Disease in Pregnancy. W. G. Dice, Toledo, Ohio.—p. 24.
Breast Physiologically and Pathologically Considered with Relation to Bleeding from Nipple. G. K. Dickinson, Jersey City.—p. 31.
Slaughter of Innocents. P. Findlay, Omaha.—p. 35.
Legal Aspects of Abortion. E. F. Oakley, St. Louis.—p. 37.
Treatment of Abortion. H. W. Yates and B. Connelly, Detroit.—p. 42.
Addition to Obstetric Armamentarium. C. E. Ziegler, Pittsburgh.—p. 46.
Teaching Undergraduate Obstetrics. A. M. Mendenhall, Indianapolis.—p. 53.
*Method of Delivery in Normal Cases. M. A. Tate, Cincinnati.—p. p. 61.
Choice of Methods for Making Labor Easy. A. H. Bill, Cleveland.—p. 65.
Case of Hemimelus or So-Called Congenital Amputation. H. Bailey, New York City.—p. 72.

End-Results of Cervix Operations.—Among 6,053 gynecologic patients whose case history is analyzed by Rawls, 11 per cent. had cervical operations. Amputation of the cervix was performed 461 times and trachelorrhaphy 232 times. Two thirds of the amputations and seven eighths of the trachelorrhaphies were done on women under 40 years of age, and were about equally combined with vaginal plastic and abdominal operations. This series is composed of 305 private cases and 394 ward cases performed by forty-one individual operators. Two hundred and eleven, or approximately 30 per cent., have been followed from one to five years. The technic of and indications for operation were those of Emmet more or less faithfully carried out. Improvement in the general health occurred in more than 82 per cent. of the cases for each operation but was greater after amputation of the cervix. Amputation of the cervix was more efficient than trachelorrhaphy in the cure of leukorrhea and dysmenorrhea but was more often the cause of these symptoms in cases previously free of vaginal discharge and menstrual pain. Voluntary sterility was increased by cervical and vaginal plastic operations, but, all things being equal, there was 11 per cent. greater sterility after amputation of the cervix than after trachelorrhaphy. Amputation of the cervix is more often than trachelorrhaphy followed by interruption of labor before full term but is no more liable to end in premature labor than trachelorrhaphy. Abortion is more frequent after amputation in proportion to the number of high amputations. Dystocia is greater after trachelorrhaphy both as to the number of operative deliveries and of difficult spontaneous labors.

Method of Delivery in Normal Cases.—The method presented by Tate, as described in one case cited, is as follows: The patient entered the hospital with the os dilated to the size of a silver half dollar. She was prepared obstetrically and taken to the delivery room at 10 p. m. Ether was administered to the surgical degree; the bladder was catheterized, and the specimen sent to the laboratory. The gloved hand, anointed with sterilized petrolatum was introduced into the vagina, one finger at a time, following the ironing-out method. The thin and easily dilatable os and vagina were thoroughly stretched by 10:30 p. m. Anesthesia was withdrawn at 10:32 p. m. The patient was allowed to recover partially from the anesthetic by 10:40 p. m. One-half c.c. of pituitary extract was now given, and the membranes ruptured. Regular pains ensued shortly. The patient was in a drowsy state and did not seem to suffer much. The child was delivered at 11:10 p. m., just one hour and ten minutes after the patient's entrance into the delivery room. The child weighed 8 pounds. There were no lacerations. The salient features of the method are: (1) Patient must be in labor, cervix obliterated, and os dilated to at least the size of a silver half dollar; (2) surgical anesthesia; (3) bladder catheterization; (4) complete manual dilatation of the vagina and cervix; (5) patient allowed to regain partial consciousness; (6) pituitary extract, 0.5 c.c. to be repeated once if the pains are not efficient in half an hour; (7) membranes ruptured.

Journal of Biological Chemistry, Baltimore

January, 1922, **50**, No. 1

Preparation of Flexible Collodion Membranes. J. M. Looney, Boston.—p. 1.
Studies on Experimental Rickets. XII. Is There a Substance Other Than Fat-Soluble A Associated with Certain Fats which Plays an Important Rôle in Bone Development? E. V. McCollum, N. Simmonds. P. G. Shipley and E. A. Park, Baltimore.—p. 5.
Biogenesis of Oil of Peppermint. R. E. Kremers, Madison, Wis.—p. 31.
Chemistry of Oxidation of Sulphur by Micro-Organisms to Sulphuric Acid and Transformation of Insoluble Phosphates into Soluble Forms. S. A. Waksman and J. S. Joffe, New Brunswick, N. J.—p. 35.
Changes in Refractive Index of Blood Serum of Albino Rat with Temperature. F. S. Hammett and I. Teller, Philadelphia.—p. 47.
Colorimetric Determination of Uric Acid. J. L. Morris and A. G. Macleod, Cleveland.—p. 55.
*Studies on Uric Acid of Human Blood. J. L. Morris and A. G. Macleod, Cleveland.—p. 65.
*Experimental Rickets in Rats. III. Prevention of Rickets in Rats by Exposure to Sunlight. A. F. Hess, L. J. Unger and A. M. Pappenheimer, New York.—p. 77.
*Some Human Digestion Experiments with Raw White of Egg. M. S. Rose and G. MacLeod, New York.—p. 83.
*Modification of Folin's Colorimetric Method for Determination of Uric Acid. H. Jackson, Jr., and W. W. Palmer, Baltimore.—p. 89.
Amino-Acids in Nutrition. IV. Modified Biologic Method of Studying Amino-Acid Deficiencies in Proteins. Cystin as Growth-Limiting Factor in Proteins of Georgia Velvet Bean (Stizolobium Deeringianum). B. Sure, Fayetteville, Ark.—p. 103.
Organic Constituent of Tube of Mesochaetopterus Taylori, Potts. C. Berkeley, Nanaimo, B. C.—p. 113.
Curve of Sugar Excretion in Severe Diabetes. H. Felsher, Chicago.—p. 121.
Studies on Proteinogenous Amines. XII. Production of Histamin and Other Imidazoles from Histidin by Action of Micro-organisms. M. T. Hanke and K. K. Koessler, Chicago.—p. 131.
Id. XIII. On Electronic Intrepretation of Certain Biochemical Phenomena. M. T. Hanke and K. K. Koessler, Chicago.—p. 193.
Id. XIV. Microchemical Colorimetric Method for Estimating Tyrosine, Tyramine, and Other Phenols. M. T. Hanke and K. K. Koessler, Chicago.—p. 235.

Id XV. Quantitative Method for Separation and Estimation of Phenols Including Phenol, *o*–, *m*–, and *p*–Cresol, *p*–Oxyphenylacetic, *p*–Oxyphenylpropionic, and *p*–Oxyphenyllactic Acids, Tyrosine and Tyramine. M. T. Hanke and K. K. Koessler, Chicago.—p. 271.

Solubility of Carbon Monoxid in Serum and Plasma. H. R. O'Brien and W. L. Parker, Pittsburgh.—p. 289.

Second Form of Uric Acid.—By means of a new method of extraction Morris and Macleod were able to isolate a second form of uric acid which the Folin-Wu method failed to include. That it is some form of uric acid rather than any other substance which reacts colorimetrically follows of necessity from the facts presented that: (*a*) it carries successively through the precipitations with zinc salt and silver magnesium mixture, which are chemically different but equally characteristic; (*b*) it then precipitates quantitatively upon acidification of its solution in the form of crystals which cannot be differentiated from those of uric acid; (*c*) it is changed quantitatively at room temperature in contact with potassium oxalate to a form readily precipitated and extracted by the usual Folin-Wu procedure; and (*d*) the new method gives a value for this second form, as well as the first, in spite of the exclusion of all substances so far tried from the multiplying effect of the cyanid on the color. Further work to determine the chemical nature of the second form of uric acid is now being done.

Sunlight in Rickets.—Rachitic lesions which develop regularly in rats on a diet adequate in calcium but low in phosphorus, were prevented by Hess and his associates by short exposures to direct sunlight. This protection is equivalent to the addition of at least 75 mg. of phosphorus to the diet in the form of basic potassium phosphate.

Digestibility of Raw White of Egg.—Rose and MacLeod conducted experiments on ten healthy subjects who took daily from ten to twelve whites of eggs as a part of a simple mixed diet, first cooked, in a threeday period, then raw for the same length of time. In no case was there any sign of indigestion, such as discomfort or diarrhea, though one of two subjects found them slightly laxative. The cooked eggs were uniformly well digested. On the whole the raw whites were well utilized, the average difference between the cooked and raw being only 4 per cent. for the protein of the whole ration or 5.5 per cent. for the egg white protein alone, in favor of the cooked. The differences between the cooked and the raw whites varied with the mode of preparation, those beaten light being the best utilized, and those taken in the natural state least well absorbed.

Modification of Folin's Method to Determine Uric Acid.—In an effort to find the cause for the troublesome precipitate developing in the colored solution, Jackson and Palmer found that if Folin's uric acid reagent were dialyzed in heavy parchment membranes against large amounts of tap water, until all the free acid was gone, and the solution so dialyzed was evaporated to dryness, a reagent was obtained which, in the presence of uric acid and an excess of sodium cyanid gave a very intense color and a more or less dense flocculent precipitate. The latter did not alter in amount or character over a period of twenty-four hours or more. If, on the other hand, Folin's uric acid reagent were boiled cautiously to dryness without dialysis, a reagent was obtained, which, in the presence of uric acid and an excess of sodium cyanid gave the same intense color, but also a dense crystalline precipitate in the course of from three to five minutes. This last reagent, which is termed sodium phosphotungstate "B" when mixed with the dialyzed sodium phosphotungstate "D" will cause dissolution of the flocculent precipitate and at the same time, no crystalline precipitate will develop unless too much "B" is added. The proper mixture of these two salts results in a reagent which, under conditions of the determination, gives a color nearly five times as intense as that given by Folin's procedure and no precipitate results.

Journal of Experimental Medicine, Baltimore

February, 1922, **35**, No. 2

Experimental Generalized Analgesia After Exposure to Some War Gases. J. Auer, New York.—p. 97.

*Experimental Studies on Etiology of Typhus Fever. II. Survival of Virus in Aerobic and Anaerobic Culture Mediums. P. K. Olitsky, New York.—p. 115.

*Id. III. Filtration Experiments. P. K. Olitsky, New York.—p. 121.

Do Species Lacking a Gallbladder Possess Its Functional Equivalent? P. D. McMaster, New York.—p. 127.

Sources of Antibodies Developing After Repeated Transfusion. O. H. Robertson and P. Rous, New York.—p. 141.

Studies on Pneumonic Exudate. V. Relation of Pneumonic Lung Protease Activity to Hydrogen Ion Concentration; Origin of Enzyme. R. N. Nye, Boston.—p. 153.

Transmission of Agglutinins of B. Abortus from Cow to Calf in Colostrum. R. B. Little and M. L. Orcutt, Princeton, N. J.—p. 161.

*Erythropoietic Action of Germanium Dioxid. F. S. Hammett, J. E. Nowrey, Jr., and J. H. Muller, Philadelphia.—p. 173.

Phenol Red and Brom-Cresol Purple as Indicators in Bacteriologic Examination of Stools. A. M. Chesney, St. Louis.—p. 181.

Roentgen-Ray Intoxication. I. Unit Dose Over Thorax Negative—Over Abdomen Lethal. Epithelium of Small Intestine Sensitive to Roentgen Rays. S. L. Warren and G. H. Whipple, San Francisco.—p. 187.

Id. II. Study of Sequence of Clinical, Anatomic and Histologic Changes Following Unit Dose of Roentgen Rays. S. L. Warren and G. H. Whipple, San Francisco.—p. 203.

Id. III. Speed of Autolysis of Various Body Tissues After Lethal Roentgen-Ray Exposures. Remarkable Disturbance in Epithelium of Small Intestine. S. L. Warren and G. H. Whipple, San Francisco.—p. 213.

*Renal Function in Roentgen-Ray Intoxication. Resistance of Renal Epithelium to Direct Radiation. I. McQuarrie and G. H. Whipple, San Francisco.—p. 225.

*Relation of Hypophysis to Antibody Production. E. C. Cutler, New York.—p. 243.

*Studies on Experimental Measles. I. Effects of Virus of Measles on Guinea-Pig. C. W. Duval and R. D'Aunoy, New Orleans.—p. 257.

Hemolysis of Erythrocytes in Contact with Glass. W. O. Fenn, Boston.—p. 271.

Etiology of Typhus.—The experiments reported on by Olitsky show that the typhus virus, found in the blood of guinea-pigs during the height of typical experimental typhus fever, does not survive at 37 C. in anaerobic mediums for as long a period as in the same medium under aerobic conditions. In mediums from which oxygen is excluded, the viability period is from twenty-four to forty-eight hours; in the same medium having no barrier to atmospheric oxygen, the period is usually five days, in one instance, three days. The dead virus fails to induce not only the typical experimental disease but also an immunity to further injections of typhus virus.

Etiology of Typhus.—Olitsky shows that the typhus virus in the tissues of the guinea-pig during the height of reaction to the experimental disease does not lose its infecting power when the cells of the birth or of the spleen are disintegrated by repeated freezing and thawing, or by freezing and desiccating, or by crushing by mechanical means, or by grinding into a homogeneous pulp with sand. The virus after such treatment is as actively infective as in the same tissue not subjected to the disintegrating influences. The possibility exists, therefore, of an extracellular condition of the typhus virus. Fourteen attempts to filter through Berkefeld V and N candles the virus contained in the disintegrated tissue have all resulted in failure.

Erythropoietic Action of Germanium Dioxid.—Injections of a sterile 0.4 per cent. solution of germanium dioxid were followed by a marked and sustained rise in the number of erythrocytes in the blood which ranged from one to nearly five millions. The effect is quick in making its appearance. The rise in the red cell count was found to occur within a week, and after but two injections of the salt. Indications were obtained that germanium dioxid tends to increase the coagulability of the blood. Necropsy findings showed color changes in the liver and bone marrow.

Effect of Roentgen Ray on Renal Function.—Experiments made by McQuarrie and Whipple give no support to the current belief that a roentgen-ray nephritis may be produced by direct or indirect action of the hard roentgen rays. Moderate doses of roentgen rays given repeatedly over considerable periods of time have no demonstrable influence on renal function or renal structure. With roentgen-ray exposures of the abdomen and shielding of the kidneys fatal intoxication may be produced without the slightest disturbance of kidney function as measured by the ability of the kidney to eliminate phenolphthalein and urea. Large doses of the roentgen rays given directly over the kidney may cause a slight but distinct lowering of renal function which lasts for a period of a few days. The authors have been unable to recognize any corresponding histologic change.

Relation of Hypophysis to Antibody Production.—An operative technic was evolved by Cutler permitting successful partial hypophysectomy in guinea-pigs. Such animals, when immunized to *B. typhosus*, produced specific agglutinins in the same quantity and at the same rate as unoperated and operation controls immunized at the same time and by the same method. In guinea-pigs previously immunized to typhosus and hen red blood corpuscles partial hypophysectomy had no effect on the continued production and persistence of typhoid agglutinins, hemagglutinins and hemolysins. In guinea-pigs immunized to *B. typhosus* both the continued ingestion and the intraperitoneal injection of the whole pituitary glands extract had no effect on the subsequent agglutinin titers as compared to that of normal animals. The experiments would appear to show either that the hypophysis does not play an important direct or indirect part in the production of and persistence in the blood of typhoid agglutinins, hemagglutinins and hemolysins, or that the amount of hypophysis left behind in the operation in order to maintain life is adequate also to exercise the degree of functional influence of these processes which the entire hypophysis conceivably exercises.

Studies on Experimental Measles.—Guinea-pigs react specifically to intracardiac injections of defibrinated blood from cases of human measles. There is a definite and constant rise in the temperature and a coincident decrease in the total number of leukocytes after an incubation period of from nine to twelve days. The guinea-pig reaction is produced with human blood only during a certain phase of the disease, which period corresponds approximately to the eruptive stage. Thirty-six hours prior to the eruption and twenty-four hours after the temperature is normal, the human blood gives rise to no reaction in this animal. The reaction follows with greater frequency in animals inoculated with measles blood obtained at the height of the eruption. Guinea-pigs which react and recover are not susceptible to reinoculation with measles blood if tested over periods of two weeks to three months after recovery. Guinea-pigs receiving normal human blood injected intracardially do not react with leukocytic or temperature changes. The constancy of the reaction described leads Duval and D'Aunoy to conclude that propagation of the virus is obtained by passage of the blood from infected guinea-pig to normal guinea-pig; that such passage seemingly increases virulence, since a number of animals thus inoculated die during or subsequently to the peak of the reaction. Apparently death in these cases results from acute hemorrhagic nephritis. Ordinary intercurrent or secondary infection plays no part in these effects as shown by careful bacteriologic examination.

Journal of Industrial Hygiene, Boston

February, 1922, **3**, No. 10

Development of Lung Fibrosis. C. K. Drinker, Boston.—p. 295.
Investigative Opportunities in Physical Examination of Large Groups of Individuals. R. I. Lee.—p. 304.
*Neuropsychiatric Examination of 1,141 Students. S. Cobb, Boston.—p. 309.
*Static Equilibrium as Useful Test of Motor Control. W. R. Miles, Boston.—p. 316.

History Best Guide to Nervous Instability.—Cobb regards history as the best guide to nervous instability—family history, past history and present complaints. In his examination of students, vasomotor instability was found somewhat more frequently in the men with neurotic histories. Tachycardia, blood pressure variation and dermographia were often found associated with each other and with exaggerated knee jerks. Men with albuminuria were likely to show all these symptoms. Endocrinopathy was rare, but the small number of cases discovered showed more symptoms referable to the vegetative nervous system and less neurotic history and acne. In men with bad mechanical use of the body, tachycardia, sinus arrhythmia, high blood pressure and variable systolic pressure were more common. The men with good bodily mechanics passed better psychologic examinations than did those with poor posture.

Measuring Static Equilibrium.—The ataxiameter as a means of carefully measuring station in man has been used at the Nutrition Laboratory of the Carnegie Institution for investigating the influence on neuromuscular control of such conditions as those before and after the taking of food, physical weakness associated with diabetes, prolonged exposure to cold, fatigue resulting from muscular work, and the ingestion of dilute alcoholic beverages. The ataxiameter automatically accumulates all the anteroposterior and lateral components of the movements directly in millimeters of sway, and provides a convenient method for making the test. The anatomic and physiologic considerations which influence stability of station and the quantitative influence of several of these factors have been shown by original data. This constitutes a description of how the test should be made. Results for a long series of measurements are presented and demonstrate that, although subject to practice, station is not very markedly improved by training. The test is put forward as a convenient and sensitive measure for variations in the efficiency of the neuromuscular mechanism of man.

Medical Record, New York

Feb. 4, 1922, **101**, No. 5

Use and Abuse of Local Support Also Motor Reeducation in Human Readjustment or Orthokinetics. J. M. Taylor, Philadelphia.—p. 177.
Nursing Problem. W. D. Alsever, Syracuse, N. Y.—p. 182.
Tuberculosis a Disease of Malnutrition. E. H. Cleveland, Rochester, N. Y.—p. 185.
Training and Proper Recognition of Physiotherapy Aides. J. F. Krasnye, Lowell, Mass.—p. 187.
*Important Sign in Diagnosis of Beginning Pulmonary Tuberculosis. W. F. Dutton, Tulsa, Okla.—p. 189.
Bacillus Aerogenes Capsulatus Infection Complicating Typhoid Fever. H. R. Muller and J. S. Lincoln, New York.—p. 190.
Exogenetic Primary Cutaneous Infections. S. S. Greenbaum, Philadelphia.—p. 193.

Diagnostic Sign of Incipient Pulmonary Tuberculosis.—In cases of incipient pulmonary tuberculosis Dutton has noted a sound which he asserts is diagnostic. The sound may often vary in pitch between that of the wood plane on soft pine and a soft rasping. It may be continuous or alternating through the entire period of inspiration, but is not usually heard on expiration. The sound is usually heard best in the second or third intercostal spaces anteriorly, on the side affected, between the sternal line and the midclavicular line. This abnormal inspiratory sound is imitated by placing the lips and tongue in position as if to articulate the letter "T," then make the sound "shlu" by taking a full slow inspiration in an undertone, or alternate. This inspiratory sound may be continuous or interrupted so as to consist of one, two or three parts. Rarely it may consist of four parts.

Michigan State Medical Society Journal, Grand Rapids

February, 1922, **21**, No. 2

General Practitioner and Medical Certificates of Insanity. H. V. Hendricks, Traverse City.—p. 67.
Medical History in Upper Peninsula. T. A. Felch, Ishpeming.—p. 72.
Problems Confronting Medical Profession. R. A. Walker, Menominee. p. 75.
Wittmaack's Views Concerning Normal and Pathologic Pneumatization of Temporal Bone. E. Amberg, Detroit.—p. 78.
When Hysterectomy is Performed When Shall We, and When Shall We Not Remove Ovaries? R. R. Smith, Grand Rapids.—p. 84.
Tuberculous Peritonitis: Report of Cases. G. J. Curry, Flint.—p. 86.
Errors in Abdominal Diagnosis. F. B. Walker, Detroit.—p. 88.

Military Surgeon, Washington, D. C.

February, 1922, **100**, No. 2

Robert Jackson, M.D., Late Inspector-General of Army Hospitals. L. Crummer, Omaha.—p. 107.
An Episode of the Second Battle of Bull Run. W. W. Keen, Philadelphia.—p. 123.
*Pulmonary Syphilis: Report of Case and Review of Reported Cases. A. Egdahl, Rockford, Ill.—p. 129.
History of Military Medicine. F. H. Garrison, Washington, D. C.—p. 142.
Critique of Army Ration, Past and Present. J. R. Merlin.—p. 163.
*Multiple Intestinal Resections for Gunshot Wounds. R. Colp, New York.—p. 188.

Pulmonary Syphilis.—The case cited by Egdahl illustrates the importance of keeping in mind the possibility of syphilis in all cases of chronic lung involvement with negative sputum. The striking results obtained after antisyphilitic treatment furnish additional proof that the improvement could scarcely be a mere coincidence, although the great prevalence of tuber-

culosis means that the two disease processes may have existed side by side. A negative tuberculin test, and the absence of tubercle bacilli after repeated sputum examinations, renders the presumption justifiable that the tuberculous focus, if present, was inactive.

Multiple Intestinal Resections for Gunshot Wounds.—Immediate operation rather than conservative treatment, Colp insists, is indicated in all perforating gunshot wounds of the abdomen, especially in civilian practice. While suture is the operation of choice, if the perforations are many, resection is preferred. And if these perforations are grouped but widely scattered, not only are multiple resections practical but they are definitely indicated. Finally, the mortality of multiple intestinal resections is probably not greater than those of single resections. Colp reports a case of double intestinal resection for multiple perforation of the intestine. One part of the upper ileum was the seat of four perforations involving about 5 inches of the jejunum; 3 or 4 feet farther was a single, large, through-and-through perforation; and about 1 foot from the cecum were two smaller perforations. The segment of jejunum with four perforations was excised and an end to end anastomosis done. This procedure was repeated in the case of through-and-through perforation. The two smaller perforations were closed with a chromic purse-string suture reinforced with plain gut. The patient made a complete recovery.

Minnesota Medicine, Minneapolis

February, 1922, **5**, No. 2

*Gallbladder as Focus of Infection. B. S. Adams, Hibbing, Minn.—p. 69.
*Etiology and Laboratory Diagnosis of Actinomycosis. A. H. Sanford and T. B. Magath, Rochester, Minn.—p. 71.
Suspension and Traction in Treatment of Fractures of Extremities. A. W. Ide and B. I. Deraut, Brainerd, Minn.—p. 80.
Primary Lesion in Cancer. J. A. Johnson, Minneapolis.—p. 86.
Results in Treatment of Inflammatory Diseases of Gallbladder and Its Ducts. O. N. Meland, Warren, Minn.—p. 90.
Intestinal Polyposis and Its Relation to Carcinoma. M. Warwick, St. Paul.—p. 94.
*Circulatory Disturbances of Feet. E. S. Geist, Minneapolis.—p. 98.
Cerebrospinal Arteriosclerosis. H. W. Woltman, Rochester.—p. 102.
*Hysterical Dysphagia. P. P. Vinson, Rochester, Minn.—p. 107.
Principles Governing Treatment of Fractures. E. K. Green, Minneapolis.—p. 108.
Mechanical Device (Belt) to Facilitate Handling of Patients in Whitman Abduction Splints. O. F. Schussler, Minneapolis.—p. 114.

Gallbladder as Focus of Infection.—Adams cites three cases of focal infection from the gallbladder. Each patient complained of severe pain in the back of the right thigh. In two cases removal of the inflamed gallbladder was followed by immediate relief of the pain. In the third case, removal of the gallbladder was advised but refused. It was drained. The patient has no pain in her leg unless she becomes overtired or has been on her feet a good deal.

Actinomycosis.—Ninety-six cases of actinomycosis seen in the Mayo Clinic are analyzed by Sanford and Magath, also 119 cases collected from the literature.

Circulatory Disturbances of Feet.—Sixty-seven cases of "foot-complaint" are analyzed by Geist. There were twenty-three cases of varicose veins and forty-two cases of arterial disease. Geist believes that these cases can be placed in four groups: (*a*) congenitally small arteries; (*b*) arterial spasm; (*c*) arteriosclerosis; and (*b*) thrombo-angiitis obliterans.

Hysterical Dysphagia.—Vinson states that the prolonged unbalanced diet gives rise to enlargement of the spleen and secondary anemia. Normal deglutition can be restored by passing an esophageal sound. Recurrences are liable to occur, but can be relieved by further passage of sounds and by constantly reassuring the patient. When normal deglutition is restored, the blood picture returns to normal and the splenic enlargement subsides. Hypothyroidism may develop after the patient begins to swallow freely, due to the inability of the thyroid to furnish secretion enough to care for the increased food intake.

Missouri State Medical Association Journal, St. Louis

February, 1922, **19**, No. 2

Our Old Enemy—Cancer. S. J. Mixter, Boston.—p. 47.
Choice Between Radium, Roentgen Ray and Knife in Treatment of Myoma and Cancer of Uterus. H. S. Crossen, St. Louis.—p. 55.
Treatment of Uterine Cancer by General Practitioner. G. Gellhorn, St. Louis.—p. 59.
Malignant Disease of Bone. H. E. Pearse, Kansas City.—p. 61.
Radiculitis Type of Epidemic Encephalitis: Report of Case. F. Neuhoff, St. Louis.—p. 62.
Lethargic Encephalitis. S. H. Snider, Kansas City.—p. 64.
*Extrapulmonary Causes of Pulmonary Symptoms and Signs. L. Clendening, Kansas City.—p. 68.
*Vomiting in Infants and Children. E. H. Schorer, Kansas City.—p. 72.
Scoliosis. A. O'Reilly, St. Louis.—p. 74.
*Treatment of Mercuric Chlorid Poisoning. O. H. Brown, Phoenix, Ariz.—p. 77.

Extrapulmonary Causes of Lung Symptoms.—Some of the extrapulmonary causes of pulmonary signs or symptoms are reviewed by Clendening. He says that cough alone may be caused by ear disease; cough with expectoration may be caused by sinus disease or tonsillar infection; cough and hemoptysis by mitral stenosis or cardiac dilatation; asthmatic attacks may be due to aneurysm, thymus enlargement, Hodgkin's disease or mediastinal abscess; dullness and signs of fluid in the chest may be caused by pericarditis, or by subphrenic abscess.

Vomiting in Children.—When vomiting is met with in a child, Schorer says at least thirty conditions in which vomiting is a symptom must be thought of; practically all vomiting falls into eight classes or groups: (1) Stomach condition: (*a*) overloading; (*b*) with eructation of gas or swallowed air; (*c*) with gastric indigestion. (2) Obstruction at the outlet of the stomach: (*a*) in pyloric spasm and pyloric stenosis; (*b*) in spastic conditions. (3) Reflex: (*a*) psychic, voluntary vomiting; (*b*) coughing may cause vomiting; (*c*) masturbation; (*d*) putting the finger into the mouth and irritating the pharynx, or irritation caused by worms may induce vomiting. (4) Infectious diseases. (5) Nervous system conditions: (*a*) meningeal irritation; (*b*) cyclic, recurrent or periodic vomiting. (6) Intestinal origin: (*a*) intestinal obstruction; (*b*) peritonitis and appendicitis; (*c*) malformations in the duodenum, colon and rectum. (7) Blood conditions: (*a*) melena; (*b*) toxemia. (8) Ulcer of the stomach in the new-born.

Treatment of Mercuric Chlorid Poisoning.—The treatment employed by Brown consists essentially of the administration of large amounts of fluid chiefly water for ten or twelve days. The patient must drink from 2 to 3 gallons in twenty-four hours. The size of the patient governs the amount of liquid prescribed. Lemonade and orangeade, well sweetened, may replace some of the water. No other treatment, except sodium bicarbonate, is used unless there are special indications.

Nebraska State Medical Journal, Norfolk

February, 1922, **7**, No. 2

Some Physical Signs of Tuberculosis. M. J. Breuer and R. G. Breuer, Lincoln.—p. 37.
Tuberculin Treatment of Tuberculosis. R. M. Fouch, C. F. Heider and K. Hoover, Omaha.—p. 42.
Treatment Against Acute and Chronic Purulent Pleuritis. C. Emerson, Lincoln.—p. 50.
Surgical Treatment of Empyema, with Special Reference to Mozinga Method. R. L. Ivins, Crawford.—p. 56.
Relation of Physiology to Surgery. C. C. Johnson, Lincoln.—p. 59.
Strangulated Fibroid Complicating Pregnancy. J. F. Langdon, Omaha.—p. 63.

New York Medical Journal

Jan. 4, 1922, **115**, No. 1

Relation of Medical Education to Medical Progress. H. S. Pritchett, New York.—p. 1.
Recognition of Impaired Renal Function. G. M. Piersol, Philadelphia.—p. 9.
Medicine's Duty Toward Tuberculous Patient. F. M. Pottenger, Monrovia, Calif.—p. 14.
Early Diagnosis of Brain Tumors Before Eye Signs Occur. T. A. Williams, Washington, D. C.—p. 18.
Unconscious in Spirit Communication and Symbolism. K. Dunlap, Baltimore.—p. 20.
Environment and Trained Assistants as Factors in Success of Cataract Extraction and Other Eye Operations. E. B. Miller, Philadelphia.—p. 24.
Development and Problems of Modern Chemotherapy of Infectious Diseases. H. Schlossberger, Frankfort on the Main, Germany.—p. 26.
Enteroantigens in Treatment of Noncontagious Chronic Disease. B. S. Dunn, Nice, France.—p. 29.
Bacterial Vaccine Therapy. C. F. Kirkendall, Chicago.—p. 32.
Anaphylactic Reaction After Blood Transfusion. S. A. Wolfe, Brooklyn.—p. 35.

First Aid. S. D. Hubbard, New York.—p. 36.
Treatment of Tuberculosis by Nasal Insufflation of Tuberculin. J. P. Israel, Houston, Texas.—p. 40.
Increasing Value of Wassermann Report. A. H. Bunce, Atlanta, Ga. —p. 41.

Feb. 1, 1922, **115**, No. 3

Nutritional Treatment of Tuberculosis. C. Pirquet, Vienna.—p. 121.
Feeding Method of Pirquet School. H. Apfel, Brooklyn.—p. 123.
Calories for Children. F. G. Benedict, Boston.—p. 126.
*Poliomyelitis with Cortical Involvement. L. P. Clark, New York.—p. 131.
Connection Between Short Thick Neck and Tendency to Apoplexy. E. F. Cyriax, London.—p. 133.
Autotherapy. T. M. Stewart, Cincinnati.—p. 135.
Acute Phlegmonous Epiglottitis: Report of Cases. J. Friedman and S. D. Greenfield, Brooklyn.—p. 137.
Cystoma and Fibrocystoma of Osseous System. E. N. Turkus, Brooklyn.—p. 140.
*Influence of Weather Conditions on Morbidity and Mortality in Early Infancy. F. I. Hoffman, Newark, N. J.—p. 145.
Maternity Homes. J. M. Campbell, London.—p. 147.
Local Anesthesia in Dental, Oral, Nose and Throat Surgery. H. E. Tompkins, New York.—p. 151.
Early Diagnosis of Stomach Cancer. J. Katz, New York.—p. 153.
Etiology and Treatment of High Blood Pressure, Arterial Hypertension, and Arteriosclerosis. G. E. Barnes, Herkimer, N. Y.—p. 155.
*Tumors of Heart. H. I. Goldstein, Camden, N. J.—p. 158.

Poliomyelitis with Cortical Involvement.—Two of the patients whose cases are cited by Clark were very similar in nervous make-up. They were both bright, sensitive, overactive types of boys, continually interested in sports and games, but only wanted to engage in them according to their own desires. In short, they possessed a mild type of epileptic make-up and probably the inception and continuance of the epilepsy was not a little conditioned upon this personality make-up. A third patient was a classical epileptic in temperament and mental attitudes. In all three, therefore, one might say that lacking the predisposition they might not have had their epilepsy or it would not have continued, as it has in three, if the predisposition to the disorder had not been present. Just what the meningeal or cortical lesion coincident with the poliomyelitis may have been, cannot even be surmised, inasmuch as the type of convulsive attacks is not dissimilar to that seen in the essential disorder. In an experience of many years and an analysis of thousands of epileptics Clark says the cases cited are all the instance of poliomyelitis followed by enduring epilepsy that he has encountered.

Weather and Diarrheal Diseases of Infants.—There appears to be a consistent rise in the sickness rate from diarrheal diseases of infants under 1 year, with an increase in both maximum and minimum temperatures. The suggestion is made by Hoffman as a conclusion forced, that it would seem entirely feasible to develop this line of inquiry in the direction of applied meteorology to the point of forecasting weather conditions favorable to an epidemic outbreak of infantile diarrhea. By this means every mother could be informed promptly through the newspapers of impending weather changes likely to prove disastrous to child life, amplified by proper suggestions from the board of health, or otherwise, as regards the danger of artificial feeding; and last, but not least, changes in feeding methods during abnormal temperature conditions.

Primary Tumor of Heart.—Goldstein states that about 150 cases of primary tumor of the heart are on record in the literature. Forty of these were sarcomas. A case of primary sarcoma, seven cases of metastatic sarcoma and two cases of secondary carcinoma of the heart and pericardium are reported.

Pennsylvania Medical Journal, Harrisburg

February, 1922, **25**, No. 5

American Surgery. E. R. Kirby, Philadelphia.—p. 299.
Nasal Accessory Sinus Disease. J. J. Sullivan, Jr., Scranton.—p. 300.
Optic Neuritis Following Nasal Accessory Sinus Disease. L. G. Redding, Scranton.—p. 304.
Electric Drill in Intranasal Maxillary Sinus Operation. G. B. Wood, Philadelphia.—p. 305.
Vaccine Therapy in Accessory Sinus Infections. J. L. Davis, Philadelphia.—p. 306.
*Malnutrition as Pretuberculous State in Children. J. D. Donnelly, Philadelphia.—p. 317.
Nutrition Classes for Children. S. D. Wyckoff, Wilkes-Barre.—p. 320.
Acute Articular Rheumatism. H. H. Penrod, Johnstown, Pa.—p. 329.
Common Types of Goiter. I. Bram, Philadelphia.—p. 336.

Malnutrition Sign of Pretuberculous State.—Donnelly points out that certain children have physical findings in the chest which might be interpreted as of tuberculosis without the clinical and symptomatic manifestations of this disease. When such findings are accompanied by malnutrition, lowered resistance and fatigue, the patient may be said to be in a pretuberculous state. Fatigue, faulty posture and malnutrition are the strongest factors in lowering resistance, preparing for and developing active pulmonary tuberculosis. Under proper care many of the chest findings improve or disappear as health is recovered.

Rhode Island Medical Journal, Providence

February, 1922, **5**, No. 2

Asthma. J. Perkins, Providence.—p. 193.
Pruritus. R. Blosser, Providence.—p. 197.

Southern Medical Journal, Birmingham, Ala.

February, 1922, **15**, No. 2

Newer Methods in Treatment of Diabetes. E. P. Joslin, Boston.—p. 93.
Duodenal Tube in Study of Liver and Pancreatic Pathology. C. W. Dowden and C. D. Enfield, Louisville, Ky.—p. 103.
Newly-Born Service. L. R. DeBuys, New Orleans.—p. 115.
Relationship of Local State and Federal Agencies in Venereal Disease Control. C. C. Pierce, Washington, D. C.—p. 121.
Acute Intestinal Obstruction. G. A. Hendon, Louisville, Ky.—p. 130.
*Sacro-Iliac Sprain. E. D. Martin, New Orleans.—p. 135.
*Early Diagnosis and Treatment of Joint Tuberculosis. J. T. O'Ferrall, New Orleans.—p. 139.
Types of Injuries Met by Railroad Surgeon. J. H. Blackburn, Bowling Green, Ky.—p. 143.
Diphtheria and Hemolytic Streptococcus Carriers as Shown by Tonsil Sections and Growth After Enucleation. G. E. Adkins, Jackson, Miss.—p. 147.
Experience with Metal Plates in Advancement of Ocular Muscles. A. O. Pfingst, Louisville.—p. 150.

Treatment of Sacro-Iliac Strain.—In the cases of simple strains or sprains Martin says the treatment resolves itself into the proper strapping of the back in the acute cases and in the chronic or recurring cases a well fitting sacro-iliac belt is needed. The buttocks should be compressed and adhesive strips 3 inches in width applied from one trochanter to the other opposite the third sacral segment. These straps should not go above the ilium. The strapping is frequently uncomfortable on account of the pull on the skin on either end of the strip. This is easily overcome by fixing these ends with another adhesive strap brought around in front and covered with gauze to prevent adhesion to the abdominal wall. This counteracts the pulling effort on the skin and, if not too tight, adds much to the comfort of the patient.

Treatment of Joint Tuberculosis.—O'Ferrall emphasizes that the treatment of joint tuberculosis requires not local treatment of the affected part alone, but rigid and long continued constitutional treatment. Protection and extension of tuberculous joints should last over a period not less than two years, especially as regards weight bearing. The promiscuous opening of tuberculous abscesses and haphazard curetting of sinuses is extremely bad surgery. The end result striven for should not be ankylosis, but a functioning joint. It is unfair to hope for such a result if weight bearing is allowed on an actively diseased bony structure.

Tennessee State Medical Association Journal, Nashville

January, 1922, **14**, No. 9

Operative Treatment of Glaucoma. H. Wood, Nashville.—p. 323.
Pre-Operative and Postoperative Management of Abdominal Operations. E. J. Johnson, Memphis.—p. 326.
*Case of Impacted Urethral Calculus Causing Extravasation of Urine. J. E. Hall, Nashville.—p. 329.
Cesarian Section. G. R. McSwain, Paris.—p. 330.
Ureteral Calculi. G. R. Livermore, Memphis.—p. 332.
Value of Occupational Therapy in State Hospitals. E. W. Cocke, Bolivar.—p. 333.
*Acute Intestinal Obstruction Due to Strangulation of Loop of Small Intestine by Meckel's Diverticulum. R. W. Grizzard, Nashville.—p. 335.

Urethral Calculus in Boy.—Hall cites a case of urethral calculus causing complete retention, rupture of the urethra and extravasation of urine in a boy, aged 15.

Acute Intestinal Obstruction with Meckel's Diverticulum.—In Grizzard's case the intestine was strangulated under a

bridge formed by Meckel's diverticulum, extending from the umbilicus to a point on convex border of the ileum about 18 inches from the ileocecal valve. The diverticulum was approximately 8 inches long, coming off at right angle from the ileum, nearly of the same caliber as the normal small intestine in the half proximal to the ileum, but smaller and more cordlike in the distal half. About 8 feet of intestine, together with the diverticulum, was resected and an end to end anastomosis made. Patient died on the fourth day, supposedly from toxemia, due to intestinal stasis.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

October-December, 1921, **18**, Nos. 214-216

*Cephalic Bruits in Children. G. F. Still.—p. 173.
*Leukosarcoma, Lymphosarcoma, Lymphadenoma and Infectious Mononucleosis. F. P. Weber.—p. 179.
Nervous Child. C. W. Barr.—p. 182.
Case of Renal Dwarfism (Congenital) with Bony Changes. D. Paterson.—p. 186.
Case of Morbilli Bullosi. E. Morton.—p. 188.

Cephalic Bruits in Children.—Still records the case of a boy, aged 8, who had a cephalic or intracranial bruit. It was well heard at both ears, perhaps a little louder at the left than at the right, and was a low-pitched systolic bruit, very like the functional bruit which is not infrequently heard over the middle of the praecordium in children. It was definitely a bruit and not merely the thud of pulsation. Still states that this bruit is not of serious import. He reviews the literature on the subject and analyzes 200 cases examined.

Leukosarcomatosis of Mediastinum.—A case of mediastinal leukosarcomatosis occurring in a boy, aged 7 years, reported in 1919 is again referred to by Weber. A special point of interest in the case was the presence of myeloid tissue in the hilus of each kidney.

British Journal of Tuberculosis, London

January, 1922, **16**, No. 1

Sun in Treatment and Prophylaxis of Tuberculosis. A. Rollier.—p. 1.
Prevention and Treatment of Tuberculosis in Administrative County of Lancaster. G. L. Cox.—p. 13.
Services of Surgical Tuberculosis Officer. C. L. Pattison.—p. 17.
Detoxicated Tubercle Bacillus Vaccine. D. Thomson.—p. 20.
Switzerland as Permanent Residence for Tuberculous. B. Stracey.—p. 29.

British Medical Journal, London

Jan. 21, 1922, **1**, No. 3186

*Position of Thyroid Gland in Endocrine System. W. L. Brown.—p. 85.
*Rheumatoid Arthritis Due to Infection of Nasal Accessory Sinus. P. Watson-Williams.—p. 88.
Case of Diaphragmatic Hernia. G. J. Langley.—p. 90.
*Hereditary Polydactylism. R. F. Young.—p. 91.
Carelli Method of Perirenal Inflation. F. Hernaman-Johnson.—p. 91.
Deep Roentgen-Ray Therapy in Malignant Disease. J. C. Webb.—p. 92.
Case of Trypanosomiasis from Portuguese East Africa Apparently Cured. G. C. Low and H. B. G. Newham.—p. 96.
Significance and Treatment of Some Abnormalities of Urine in Children. A. Dingwall-Fordyce.—p. 97.
Blood Pressure in Functional Bruits in Children and Young Adults. A. F. Martin.—p. 99.
*Clinical Test for Presence of Cellular Elements in Urine. T. H. C. Benians.—p. 100.
Fracture of End Phalanx of Finger, with Rupture of Common Extensor Tendon. J. N. Laird.—p. 101.
Torn Splenic Artery: Splenectomy. J. A. Reed.—p. 101.
Operation for Relief of Ascites, Following Cirrhosis of Liver. J. L. Bocarro.—p. 101.
Classification of Squint. A. F. Fergus.—p. 102.

Position of Thyroid in Endocrine System.—Brown states that the position of the thyroid in the endocrine system is that of a powerful activator of metabolism. In this respect it cooperates with the suprarenals and the pituitary, and antagonizes the pancreas and the parathyroids. On the nervous side it cooperates with the sympathetic nervous system, both being stimulated to increased activity by it and lowering the threshold to it. In this way it plays an important part both in external and internal defense. Externally, it leads to greater manifestation of energy in the direction of fight or flight; internally, it quickens the reactions to bacterial invasion. An important way in which it accomplishes this is by mobilizing the blood sugar. This increased supply of sugar may either be used for muscular energy in external defense or for heat in the febrile reaction of internal defense. As a provision against waste of this sugar, the kidney threshold is raised to prevent its escape into the urine, so that despite hyperglycemia there may be no glycosuria. Yet this blood sugar may exceed even this raised threshold, so that some escapes. This is particularly likely to occur during emotional excitement, when the gland is apt to enlarge. It interacts also with the gonads, and the undoubted fact that it plays a more active part in female metabolism may be due to its origin from the uterus of a palaeostracan ancestor. This interaction may account for the disturbances which are so apt to occur in the gland after an artificial or natural climacteric. That in the former instance this is likely to take the form of intermittent hyperthyroidism may be due to the gland being still in full activity; in the latter instance hypothyroidism is more common, presumably because the gland is already undergoing retrogression. The combination of a distressing emotion of matrimonial origin with a toxemia of alimentary origin is the most fertile cause of hyperthyroidism, and biologic considerations are presented to explain why this is the case.

Rheumatoid Arthritis Caused by Infected Nasal Accessory Sinuses.—The recognition of the infective nature of a considerable percentage of clinical syndromes loosely designated rheumatism, rheumatoid arthritis, chronic articular fibrositis, neuritis, and so forth, has led to investigations directed to the many possible sources of such infection. Williams asserts that while the teeth, gastrointestinal and genito-urinary tracts have received due consideration, there lies in the nasal accessory sinuses a possible source of chronic systemic infection which merits more attention than has hitherto been accorded to this region. Notes are given some cases which have benefited definitely by treating the infection of the nasal sinus.

Hereditary Polydactylism.—A case of bilateral double great toe is reported by Young and the hereditary nature is shown. The genealogic table is very incomplete, and can only be traced to the grandfather of this patient. Prior to him it is reported that accessory toes have "descended down, but was a matter which was never discussed." The only deformity has been that of additional toes. The grandfather, father, one uncle, one brother and one sister had this deformity.

Clinical Test for Cellular Elements in Urine.—The test recommended by Benians is made to ascertain the presence of peroxid splitting enzymes in the urine. These enzymes have the power of setting free oxygen from hydrogen peroxid, and the reaction in a fluid medium gives rise to the ebullition of gas bubbles. If hydrogen peroxid is added to normal sterile urine no effervescence occurs even after a considerable time has elapsed. It follows that if the addition of the peroxid leads to effervescence, some abnormal element is present in the urine. These enzymes are present in pus cells or leukocytes in large amount, and these, therefore, give a very free reaction. Epithelial squames give little reaction, unless heavily infected with bacteria, but the deeper epithelial cells react more freely. Tube casts may react vigorously. Red blood cells give the reaction on account of their hemoglobin. Of the albuminous fluids fresh blood serum gives an active reaction, probably on account of some blood cells remaining in suspension in it, since other albuminous fluids such as hydrocele and ascitic are inert. Practically all of the bacteria, with the exception of the streptococcal group (which includes the pneumococcus), gave active ebullition with hydrogen peroxid when the cultures are treated directly with it. At the same time, when bacteria are grown on sugar-containing medium (which they fermented with the production of acid), they are liable to give a negative reaction. This point has to be considered in dealing with very acid urines, since the peroxid-splitting enzymes only act well in neutral or alkaline media. If the urine is strongly acid or alkaline to litmus it should first be neutralized by the addition of a few drops of dilute alkali or acid. The peroxid should be fairly fresh, not less than 20 volumes in strength—40 volumes is better—and not too acid in reaction. To about a third of a test tube of urine about a quarter of the amount of the

20 volumes peroxid solution is added. The tube is placed in a rack, not in direct sunlight, or spontaneous evolution will take place. In a strongly positive reaction bubbles start to rise immediately and form a permanent layer of foam at the top of the fluid. If the reaction is only faintly positive, bubbles will gradually rise and form a thin layer on the top; this may take from fifteen to twenty minutes, or longer, if the urine is acid. A few bubbles lying on the meniscus are made more evident by gently rocking the tube to throw them down into the fluid. In a normal urine one or two bubbles may rise immediately after the addition of the peroxid, especially if the urine is warm, but there is no steady evolution of gas or formation of a layer of foam.

International Journal of Public Health, Geneva, Switzerland

November-December, 1921, Supplement to Vol. 2, No. 6

Tuberculosis Contagion, Especially in Infancy. L. Bernard.—p. 661.

Journal of Tropical Medicine and Hygiene, London

Jan. 2, 1922, **25**, No. 1

Phenolipoid N. in Experimental Infection by Micrococcus Melitensis. A. Carini.—p. 1.
*Treatment of Leprosy by Intravenous Injection of Chaulmoogra Oil. P. Harper.—p. 2.
*Peculiar Type of Epidemic Dermatitis. O. Browne.—p. 4.

Chaulmoogra Oil Intravenously in Leprosy.—At Makogai Asylum (Fiji) more than 200 patients are undergoing treatment by intravenous injection of chaulmoogra oil. Since the treatment was started over 26,000 injections of chaulmoogra oil have been given intravenously. No serious ill effects have occurred, but there have been two subcutaneous abscesses (due to faulty injection), which rapidly yielded to ordinary treatment. Patients vary considerably in the dose tolerated, and therefore the dose must be carefully adjusted to each patient. The temperature chart alone is no guide to dosage. "Treatment reaction" may consist of tachycardia, fever, and a blotchy, red, raised eruption, sometimes accompanied by swelling of nodules and infiltrations, which are then completely or partially absorbed. Patients are seldom very ill with "treatment reaction." Most patients improve without a treatment reaction severe enough to be noticed. Thirty-eight patients have now been under treatment for periods of up to eleven months. Twenty-eight have improved, one died of influenza, three have definitely got worse, and in six there is no change.

Epidemic Dermatitis.—The dermatitis described by Browne is peculiar in that it comes abruptly. Within a few moments severe itching occurs usually on the abdomen or buttocks, and a rash like "hives" urticaria makes its appearance. Many of the "hives" become papular. Granulomas of the size of a small bean or marble form in the deeper layers of the skin. The pruritus is intense, especially at night. The pruritus is also peculiar at times, and feels like something "swarming" in the skin. There is also at times considerable formication or biting, causing the patient to hunt about for ants or fleas, but the formication travels too rapidly to be insect in origin. At times there is a feeling like cobwebs on the face. Tearing away the scab from a papule eases the irritation till a new scab forms. There is no tendency for the individual papules to spread, but each, after itching, scaling and persisting for perhaps months, dies away gradually, being succeeded by fresh eruption. The skin, especially if dark, is left in a piebald unsightly condition, with either darker or lighter spots. Fortunately, however, these marks gradually wear away, except in lesions that have by scratching become deeper than usual. No portion of the skin is exempt. Even the palms, soles and glans penis may be affected. The eruption has a way of skipping about, dying down on one part and suddenly appearing on another. Minute plaques may occur on the backs of the hands and elsewhere. Whitlows may form. Also at times roseolar rashes appear, especially on the chest. The hair also gets cut off at the base by all this dermatitis, and may be shed so plentifully as to leave the part smooth and bare, but it grows again. The symptoms may last only three or four months, but usually they last very much longer, subsiding, even altogether disappearing at times, only to break out again. Treatment is very unsatisfactory, and usually the most that can be done is to relieve symptoms.

Lancet, London

Jan. 21, 1922, **1**, No. 5134

History of Surgery of Brain. C. Ballance.—p. 111.
*Influenza: Treatment by Direct Stimulation of Leukopoiesis. J. G. Willmore and F. M. Gardner-Medwin.—p. 116.
*Sigma Reaction for Syphilis. A. F. Rook.—p. 118.
*Bilious Attacks and Epilepsy. C. W. Vining.—p. 122.
*Researches on Cinchona Alkaloids. H. W. Acton.—p. 124.
Case of Lateral Sinus Thrombosis. L. B. C. Trotter.—p. 128.

Treatment of Influenza by Stimulating Leukopoiesis.—The treatment employed by Willmore and Medwin was directed toward stimulating the production of leukocytes directly by means of injections hypodermically or intramuscularly of sodium nucleinate and to neutralizing the poison already circulating in the tissues by large doses of alkalis (sodium bicarbonate, 4 gm., four-hourly), and by giving as much glucose in the food as patients would take. In the worst cases glucose was given per rectum, subcutaneously, or intravenously in a 3 per cent. solution, combined with sodium bicarbonate, 2 per cent. Free purgation with calomel and salines, cardiac stimulants hypodermically (such as camphor in oil and caffein in a solution of sodium benzoate as required), and a mixture containing potassium iodid and creosote in cases in which there was much mucopurulent expectoration, were concomitants in the treatment. The diet consisted of milk and glucose, and dilute albumin-lemon-glucose-barley water, of which the patients were encouraged to drink as freely as ever they could. Honey was given when it could be got. Twelve patients with influenza and pulmonary complications, all so seriously ill that a fatal issue was reasonably anticipated in every instance, made an uneventful recovery.

Sigma Reaction for Syphilis.—The results of the series of cases in which Rook studied the sigma reaction of Dreyer and Ward would seem to show that the results as regards blood serum tests in untreated cases are as good, or even slightly better than the results obtained by the Wassermann reaction, when judged from a clinical standpoint. The results obtained in the cerebrospinal fluid have not been so good as have the results of the Wassermann reaction.

Bilious Attacks and Epilepsy.—Evidence is presented by Vining to emphasize the possibility of the "bilious attack" and other morbid phenomena occurring in the child and adolescent being in some cases an expression of a potentially epileptic nervous system. The recognition, therefore, of the possible relationship of these phenomena to the epileptic state and their active and prolonged treatment, together with suitable control of the child's life, may go a long way in the prevention of the development of the convulsive habit.

Cinchona Alkaloids.—As the result of his researches Acton concludes that (1) the dextrorotatory alkaloids, "cinchonin series," are more powerful than their levorotatory isomerides, the "cinchonidin series"; (2) the hydro-alkaloids are more stable and more active in many respects than the natural alkaloids; (3) the higher members of both series of these alkaloids are more toxic to mammals, protozoa, and bacteria than the lower members.

Jan. 28, 1922, **1**, No. 5135

Problem of Solitary Child. R. Hutchison.—p. 163.
History of Surgery of Brain. C. Ballance.—p. 165.
*Case of Acute Anaerobic (B. Welchii) Infection of Uterine Fibroids. W. B. Gabriel and A. N. Kingsbury.—p. 172.
Chronic Deep Infection of Jaws. S. Colyer.—p. 175.
*Two Cases of Fever. R. V. Solly.—p. 177.

Acute Anaerobic Infection of Uterine Fibroids.—Gabriel and Kingsbury postulate that necrobiosis of uterine fibroids is due to an anaerobic infection derived from the cavity of the uterus; the infection remains localized to the fibroid, and results in (*a*) local changes, (*b*) general effects. (*a*) Hemolysins produced in the fibroid will account for the hemolysis. The initial infection will cause a vascular engorgement which by distension of the capsule will account for the pain of which these patients complain. Later, infective periphlebitis may involve the capsular vessels, and the condition may proceed

finally to an established phlebitis and thrombosis. (*b*) General effects, such as malaise, fever and secondary anemia, are produced partly by the absorption of these necrotic products, and partly by the hemolysis which these bacterial toxins can also effect in the general circulation. The case reported by Gabriel and Kingsbury has much in common, clinically and pathologically, with more typical cases of acute red degeneration. It differs in that the infection proceeded to a well established septicemia. The authors believe that the theory of anaerobic infection as the primary cause of this condition is more satisfactory than the current theories of primary thrombosis or aseptic necrosis, and the immunity from red degeneration which ovarian fibroids show is well explained by this theory in virtue of their noncontact with the uterine cavity. A final point is the fact that although all varieties of uterine fibroids may become necrobiotic, interstitial and submucous tumors are most liable to become affected.

Pneumococcus Pyrexia: Paratyphoid Fever.—Solly reports a case of long continued pyrexia due to pneumococcic infection and a case of paratyphoid. The first case was very prolonged, lasting from the end of January to June 11. Besides the temperature there were very few symptoms—sweating, headache, and a curious macular rash, with some nasopharyngeal catarrh, and weakness and increased pulse rate. Blood cultures on two occasions were negative. There was a definite leukocytosis with increased percentage of polymorphonucleus and a pneumococcus was isolated from a swab taken from the nasopharynx. Recovery is attributed to vaccine, as the characters of the temperature curve show definite alteration after this vaccine was begun. The second case was of two months' duration. Sciatica was one of the symptoms, but this passed off. As regards the agglutination test a very definite "zone of inhibition" in the lower dilutions appeared. The diagnosis was finally clinched by the isolation of *B. paratyphosus* B from the serum obtained from a small swelling in the chest.

Archives Franco-Belges de Chirurgie, Brussels

December, 1921, **25,** No. 3

*Torsion of the Great Omentum. R. Simon and E. Stulz.—p. 193.
*Surgical Treatment of Trigeminal Neuralgia. L. Christophe.—p. 206.
*Edema and Vasotrophic Shocks. G. Bouché and A. Hustin.—p. 219.
Spinal Anesthesia with Syncain-Caffein. Chauvin and Moya.—p. 223.
*Periarterial Sympathectomy for Causalgia. O. Platon.—p. 226.
Intestinal Obstruction and Ascaris Lumbricoides. Verdelet.—p. 241.
*Congenital Luxation of Hip Joint. A. Lambotte.—p. 244.
Osteotomy in Infantile Paralysis. M. van Neck.—p. 247.
*"Dovetail" Bone-Graft. J. Moreau.—p. 256.
*Treatment of Congenital Luxation of Hip Joint. Delchef.—p. 268.
Epispadias and Apparatus Against Enuresis. Maffei.—p. 276.
Treatment of Pseudohermaphroditism. Marique.—p. 280.
Autoplasty for Pre-Scrotal Hypospadias in Adult. F. Dordu.—p. 282.

Torsion of the Great Omentum.—In the case described a portion of the omentum had slid down into the scrotum, forming a pear-shaped hernia which had twisted on its pedicle. The hernia and its torsion may be long in developing and may cause no symptoms until suddenly a severe clinical picture calls for immediate operation.

Operative Treatment of Trigeminal Neuralgia.—Christophe's eleven illustrations outline the technic for section of the posterior root of the gasserian ganglion as done, he says, by American surgeons to cure trigeminal neuralgia.

Shock Treatment of Chronic Edema.—Bouché and Hustin argued that as local edema is the most frequent and most durable symptom of a local anaphylactic shock, and as it subsides on repetition of the shock, chronic edema might yield in the same way to induced shocks. In three cases of chronic edema, of traumatic origin in adults, improvement followed treatment on this basis. One man was injected with 6 c.c. of diphtheria antitoxin and, two weeks later, with 0.5 c.c. of the same, repeating this at five to seven day intervals for nearly three months. In the two other cases, crotalin was used for the shock treatment. The edema increased after the first injection, but then subsided completely under three or four more injections in about a month.

Treatment of Causalgia.—Platon reports excellent results in eighteen cases of causalgia treated by resection of the sympathetic network around the main artery of the region. The pains subsided completely after this periarterial sympathectomy. In sixteen of the cases the pain stopped at once after the operation; in the others it was more gradual. The causalgia had followed a war wound in all the cases, involving motor nerves in all but two.

Congenital Luxation of Hip Joint.—Lambotte declares that luxation of the hip joint can be corrected at any age. He has accomplished this in a number of patients between 15 and 47 years old. A lever-tractor pulls the head of the femur down into place, and the acetabulum is hollowed out deeper and the head of the femur carved to correspond. The operation is easier in adults than in children, and recurrence is less frequent. He gives an illustration of his special lever for prying the head into place, and of his curet which is exactly the size and shape of the femur head.

The Mortise and Tenon Bone Graft.—Moreau saws the bone stump in half lengthwise and then perpendicularly through one half, slanting this perpendicular line at an angle of 45 degrees. The implant is cut to correspond, with beveled ends, fitting into the gap between the stumps to form a trapezoidal dovetail mortise and tenon. This insures exceptional solidity and the maximum of contact between the bone surfaces, while the shaft can be restored to its normal length. This technic is particularly advantageous for pseudarthrosis or a gap in the bones of the forearm.

Congenital Luxation of the Hip Joint in Adults.—Delchef's illustrations show the excellent outcome of simple reduction in five out of six girls and women with congenital luxation of the hip joint. He applied a plaster cast that immobilized the knee almost in the axilla. In one patient the arm was left free; in the others the upper arm was included in the cast. The axillary position holds the head low in the acetabulum. The one failure in his series was in a case of bilateral luxation. He tried to correct the luxation on both sides at the same time, but succeeded only on one side, so that the limbs are now of unequal lengths and the patient refuses to allow operative correction on the other side.

Archives des Maladies du Cœur, etc., Paris

November, 1921, **14,** No. 11

Abnormal Terminal Tachycardia. L. Gallavardin.—p. 481.

Bulletin Médical

Dec. 24, 1921, **35,** No. 52

Therapeutics in 1921. G. Lyon.—p. 1019.

Jan. 7, 1922, **36,** No. 1.

Diathermy in Urology. R. Le Fur.—p. 5.
Mountain Climbing with Artificial Pneumothorax. C. Mantoux.—p. 9.

Jan. 11, 1922, **36,** No. 2

*Rectoscopy. F. Moutier.—p. 19.
*Technic for Spinal Anesthesia. R. Dumas.—p. 22.

Jan. 14, 1922, **36,** No. 3

The Bacteriophagum Intestinale: Facts; Interpretation; Application. Françon and Marquézy.—p. 33.

Rectoscopy.—Moutier remarks that a speculum for the anus was used in remote antiquity, but Desormaux was the first to devise an actual endoscope, in 1853. These original instruments were on exhibition at the recent history of medicine congress. But, he adds, Kelly first rendered it practicable, in 1895. Moutier describes the simple technic for endoscopy and interpretation of the findings. He emphasizes that malignant disease in the rectum is practically always secondary to cancer at the sigmoid flexure, and the primary growth cannot be felt with the finger in the rectum. Rectoscopy would reveal it in its early and curable stage if this were a routine procedure. But to date even digital examination of the rectum is rarely practiced until grave symptoms show that the readily curable stage is past.

Intraspinal Anesthesia.—Dumas expatiates on the advantages of intraspinal injection of the anesthetic in the lumbar region for operations in the pelvis. It is by all means the best method, he says, in cases of obesity, insufficiency of liver or kidney, and with lung disease. There are a number of absolute contraindications to it, however, and ignorance of

these is responsible for the mishaps that have been reported. Now that they are known and can be avoided, he says, the technic is simple and as safe as any anesthesia. Shock in any form, from hemorrhage, infection or weakness, contraindicates intraspinal anesthesia. In these conditions and in emergency operations, nitrous oxid plus local anesthesia is preferable. All the grave cases of syncope and arrest of respiration in civilian practice were in patients with strangulated hernia, ileus, peritonitis or extensive hemorrhage. In these conditions the patient cannot stand the intense drop in pressure that follows the intraspinal injection. Grave or fatal symptoms follow in five or ten minutes. But aside from such conditions as these, he continues, it is a wonderful method which does away with necessity for an anesthetist, and leaves the lungs, kidney and liver intact.

Gynécologie et Obstétrique, Paris

November, 1921, **4**, No. 5

*Thyroid in Relation to Pregnancy. Andérodias et al.—p. 387.
*Hysterectomy in Puerperal Infection. Cadenat et al.—p. 394.
*Treatment of Puerperal Fever. Andérodias.—p. 412.
*Puerperal Infection and Insufficiency of the Liver. Bourcart.—p. 419.
Moving Pictures for Teaching Obstetrics. V. Wallich.—p. 422.
*Radium Treatment of Uterine Fibromas. Siredey et al.—p. 427.
Radium Treatment of Uterine Cancer. Bégouin et al.—p. 440.
*Radium Therapeutic Drainage. F. Daels (Ghent).—p. 459.
*Radium Treatment of Hemorrhagic Metritis. Siredey et al.—p. 482.
Radium Treatment of Vulvar Vegetations. P. Degrais.—p. 493.
Modified Wertheim Operation for Genital Prolapse. S. delle Chiaje (Naples).—p. 495.
Luteal Cells in Relation to Uterine Hemorrhage.—de Rouville and P. Seppey.—p. 499.
Cystoscopy in Diagnosis of Gynecologic Disease. G. de Rouville and E. Desmonts.—p. 503.

The Gynecologic and Obstetric Congress.—This issue of *Gynécologie* publishes the discussions on the main addresses, and other communications presented at the recent congress. The addresses themselves were reviewed in these columns, Nov. 26, 1921, p. 1770.

Insufficiency of the Liver in Puerperal Infections.—Bourcart expatiates on the primordial importance of the liver in combating infections, and states that his years of study of this subject have shown that the liver functioning flags usually in consequence of an inadequate blood supply. The portal vein begins and terminates in capillaries; its contents are forced along only by the abdominal pressure, and this pressure is modified by ptosis and atrophy and flabbiness of the abdominal wall. How to improve the circulation in the liver is the great question. The abdominal circulation in dogs is unhampered, and they never have appendicitis nor puerperal fever nor gastric ulcer. Removing the causes hampering the circulation through the liver has an enormous influence, he says, on the defense of the organism against infection in the blood. Light manual vibratory massage of the region below the liver for twenty or thirty minutes, or training the patient to spread the ribs and draw in the abdomen, has often, after a single sitting, been followed by the temperature dropping to normal by the next day, and all the organic functions resuming their play in cases of septicemia with fever of 102 and 104 F. and scanty urine. Even if the benefit is not so prompt as this, the turn for the better is soon evident. Manual vibratory massage is extremely gentle when properly done, and is less risky than intravenous injections, etc. It is simple to apply on condition that it is restricted to surgical hands. It is being applied regularly in the Geneva Maternity.

Radium Therapy for Uterine Fibromas.—A large number of communications on this subject were presented. The majority of speakers and those with the widest experience seemed to feel that a larger proportion of patients will be cured by an operation than with radiotherapy..

Radium Treatment of Uterine Cancer.—A large number of communications are reproduced, with numerous illustrations, especially of the method used by Daels of Ghent who introduces several drain tubes from various points, each containing one or more radium applicators. He usually places one in the uterus, vagina, rectum or bladder and two others on each side passing through the cellular tissue of the small pelvis, from above the pubis to one side of the anus. Some of his cases, surgically inoperable, have been cured for over a year to date. Five of the patients have died, one from ileus, and one from hemorrhage. He reported eighteen cases in which this *drainage radiumthérapeutique* had been successfully applied. De Rouville and Siredey reported cases showing that radium therapy can be applied without interrupting a pregnancy. Oppert warned that radium necrosis in the rectum must not be mistaken for cancer. Hartmann agreed with those who regard deep roentgen therapy plus radium therapy as having the most promising outlook.

Radium Treatment of Hemorrhagic Metritis.—Several warned that radium should not be used for this purpose in young women, but otherwise the reports were favorable for it.

Paris Médical, Paris

Jan. 14, 1922, **12**, No. 2

Symptomatic Value of Exophthalmos. F. Terrien.—p. 33.
The Fight Against Cancer. L. Dieulafé.—p. 41.
Import of Revivescence in situ of Chancre. E. Orphanidès.—p. 44.

Jan. 28, 1922, **12**, No. 4

Treatment of Painful Dilatation of Right Colon. Grégoire.—p. 69.
Compulsory Antityphoid Vaccination. C. Dopter.—p. 76.

Presse Médicale, Paris

Jan. 4, 1922, **30**, No. 1

Military Councils of Revision for the Disabled. L. Bernard.—p. 1.
*Diagnosis of Ileus. A. C. Guillaume.—p. 2.

Diagnosis of Acute Obstruction of the Intestine.—Guillaume urges the necessity for roentgen-ray examination in every case in which the diagnosis is not certain. In two of some cases illustrated, this revealed other causes for the symptoms and rendered unnecessary the proposed exploratory laparotomy. No attempt in these cases was made to give a contrast suspension, the shadows proving instructive enough without this.

Jan. 7, 1922, **30**, No. 2

*Inherited Dystrophia of Bones. A. Léri.—p. 13.
*Periodical Oculomotor Paralysis. T. Mironesco.—p. 17.
*Fracture of the Clavicle. F. Burian.—p. 17.

Familial Pleonosteosis.—This is the term coined by Léri to describe the condition of exaggerated ossification, a diffuse dystrophia of the bones, congenital and inherited, in a father and two children in one family. It is most pronounced in the man but is unmistakable even in the 3 weeks babe. Certain characteristics suggest a Mongolian type of bone growth as is evident in the roentgenograms.

Recurring Oculomotor Paralysis.—The paralysis returned during attacks of relapsing fever, and subsided each time as the fever subsided.

Traction for Fracture of Clavicle.—Burian gives an illustration of the Figure 8 bandage around the shoulders, connected by a rubber drain tube on the median line of the back with a girdle around the waist, held in place with a band in the crotch.

Revue de Médecine, Paris

September-October, 1921, **38**, No. 9-10

*Epinephrin Hyperglycemia. C. Achard, A. Ribot and L. Binet.—p. 447.
*Pathogenesis of Asthma. M. Ségard.—p. 457.
*Tuberculous Articular Rheumatism. Baron and H. Durand.—p. 471.

Epinephrin Hyperglycemia.—The action of epinephrin on the sugar content of the blood was studied on dogs, as also the relations between epinephrin and pancreas extract in respect to the storing and combustion of sugar in this line. They seem to have an antagonistic action. After removal of the pancreas, injection of epinephrin did not increase the sugar content of the blood. Otherwise, epinephrin seemed to check the sugar holding and sugar oxidizing properties of the organism.

Pathogenesis of Asthma.—Ségard remarks that Brown's "Asthma" (1917) lists 472 works dealing merely with the pathogenesis of asthma. There is evidently not a single cause. Several factors, internal and external, combine in varying proportions in the clinical picture. Vagotonia is an indispensable element, but inadequate alone to induce asthma. Colloidoclasis is an effect, not a cause. These two elements recall the neurosis and the dyscrasia of the old school. Thus our predecessors, with clinical observation alone, recognized

the main elements of the problem. The final solution must be sought in biology and probably in physical chemistry.

Subacute Articular Rheumatism of Tuberculous Origin.—After two years at the front the young man showed signs of chronic infection, tachycardia predominating. After eighteen months of this, tuberculous pleuritis without effusion developed, and was soon followed by a tuberculous process in the lung. Then came a period of septicemia, with two attacks of what seemed to be subacute polyarticular rheumatism, the paroxysms of fever recurring so regularly that they suggested malaria. Tubercle bacilli were found in the blood during the attacks of "rheumatism" and also in the tuberculous swelling that developed in the joint at the time. Baron and Durand give the full details of this and of another case, and emphasize the importance of tuberculosis as capable of inducing attacks of acute articular rheumatism. Such cases were not rare in 1918, but none are encountered now, as life seems to be returning to more normal conditions. Toward the close of the war, tuberculosis seemed to change its character, invading both lungs and running a rapid course, sowing its lesions everywhere, in liver, spleen, intestine, meninges, etc. Measles and influenza may have cooperated in this.

Schweizerische medizinische Wochenschrift, Basel

Dec. 8, 1921, **51**, No. 49

*Central Luxation of Hip Joint. E. Bosch.—p. 1129.
Phorometer Findings in Fatigue. J. Strebel.—p. 1138.
Improved Epiglottis Lifter. L. de Reynier.—p. 1141.

Central Luxation of Hip Joint.—Bosch analyzes eleven cases of central luxation, including four personally observed, and compares them with seventy-five from the literature. Examination through the rectum is decisive for the differential diagnosis. Treatment aims to restore the head of the femur to its place and keep it there, with early exercise of the joint, but without weight bearing until late. The failure to recognize the central luxation is responsible for much damage later. Continuous upward traction insures reduction better than abrupt measures. When the trochanter is seen to have returned to its proper place, it may be possible to reconstruct the acetabulum from its fragments by manipulating them through the rectum. He succeeded in this in one of his four cases. In one case the extension traction took fully twenty hours, with weights of 15 kg. lengthwise and 4 kg. sidewise, before reduction was complete. No attempt at walking should be allowed until after ten weeks. The ultimate outcome was relatively good in his cases.

Dec. 22, 1921, **51**, No. 51

*Operations for Neuralgia of the Face. A. Jentzer.—p. 1177.
Geographical Distribution of Epilepsy. J. Wyrsch.—p. 1182.
*Banti's Disease in Child. E. Opprecht.—p. 1189.
Relief from Orange Peel Distillate in Gallstone Case. Seiler.—p. 1191.

Intracranial Operations for Trigeminal Neuralgia.—In the first of Jentzer's two cases, the nerve was compressed by deposits of hemosiderin, relics of an old local hemorrhage. The cure of this patient confirms that even neuralgia of central origin may be successfully treated by operative measures. This patient was a frail woman of 57 who had had a leg and an arm amputated since 1915 on account of tuberculous arthritis. The trigeminal neuralgia had first appeared in 1908, and by 1920 had become so severe that the woman did not dare to eat, and in order to prepare her for the retrogasserian resection she was fed by gastrostomy. Her prompt recovery after the operation shows that this technic does not entail much shock.

Banti's Disease.—Opprecht gives the details of a typical case of Banti's disease in a boy of 11, with clinical cure after splenectomy. The first symptoms had been noted at the age of 6.

Archivio Italiano di Chirurgia, Bologna

November, 1921, **4**, No. 4

*Wounds of Inferior Vena Cava. G. Costa.—p. 339.
Hernia from Military Service and from Industrial Accidents. E. de Paoli.—p. 389.
Hernia of Gallbladder in Woman of Sixty-Two. O. Finzi.—p. 449.

Ligation of Inferior Vena Cava.—In 1907 Costa was compelled to ligate this vein during removal of a kidney with calculi and suppuration, and the young woman had apparently no permanent injury therefrom. He describes and compares this experience with cases published by others, a total of 16 cases in all. In 22 other cases the injured vena cava was sutured. Ligated above the mouth of the left renal vein, the sudden arrest of the circulation through the vein is always fatal, but ligation below the renal vein seems to be free from permanent injurious consequences, although there may be transient edema in the leg below, and transient albuminuria. Anuria and thrombophlebitis are the more important postoperative complications sometimes observed, but the thrombophlebitis seems to be merely the common surgical phenomenon of the kind, and not traceable to the ligation in itself. Anuria proved fatal in 2 cases, but the circumstances of the cases relieved the ligation from responsibility for this.

Pediatria, Naples

Dec. 15, 1921, **29**, No. 24

*Etiology and Pathogenesis of Scarlet Fever. G. di Cristina.—p. 1105.
Prevalence of Kala-Azar in Messina District. G. Milio.—p. 1109.

Experimental and Bacteriologic Research in Scarlet Fever.—In Di Cristina's research during the last two years, young rabbits and young guinea-pigs inoculated by the vein or in the peritoneum with cultures from blood and bone marrow from human scarlet fever cases developed a disease that proved fatal in a few days, with cachexia and hyperemia of the viscera, but without the special features of scarlet fever. From the blood and spinal cord of clinical scarlet fever cases, he cultivated an anaerobe, extremely minute. It can be cultivated indefinitely, but requires from six to twelve days to show the first trace of growth. In this preliminary communication he does not describe the culture mediums used except that all tested had catalyzing properties, and oxygen was excluded. This anaerobe was agglutinated by the blood of rabbits injected with these cultures or with blood from scarlet fever patients. There was no deviation of complement in the clinical cases, using these cultures for the antigen, but rabbits treated with the cultures responded with positive deviation of complement, using an extract of scarlet fever scales for the antigen. His research in this line is now at a standstill as no more cases of scarlet fever have been encountered, but he is studying whether animals given preliminary treatment with sterilized cultures will prove immune to infection. He is also planning systematic prophylaxis on this basis for localities where scarlet fever is prevalent.

Policlinico, Rome

Dec. 19, 1921, **28**, No. 51

Appendicitis of Amebic Origin. E. Sanfilippo.—p. 1715.
*Recurring Cryptogenous Fever. B. Masci.—p. 1719.
Grain Itch in Romagna in 1921. D. Pantaleoni.—p. 1724.
*Stringy Urine. A. Capogrossi.—p. 1724.

Cryptogenous Intermittent Fever.—Masci could only exclude one disease after another in the case described, no cause being discoverable for the recurring periods of five or six days of fever and malaise followed by about ten days of normal temperature. The malaise progressed to fatal cachexia in nine months. There had been fourteen attacks in all, returning with rhythmic regularity. Necropsy was not allowed.

Threads in Urine.—Capogrossi describes the glycerobacterium which is responsible for *urine filante*. It has no pathologic importance, he says.

Jan. 2, 1922, **29**, No. 1

*Vitamins as Factor in Immunization. M. D'A. Biondo.—p. 3.
Flail Shoulder from Infantile Paralysis. L. Bosco.—p. 5.
Congenital Luxation of Head of Radius. A. Kraus.—p. 8.
*Protein Therapy in Venereal and Skin Diseases. M. Artom.—p. 10.
*Health Certificate for Candidates for Matrimony. C. Gasparini.—p. 12.
Present Status of Bismuth Paste for Fistulas. L. Dominici.—p. 14.

Vitamins as Factors in Immunization.—Biondo here relates that his series of experiments on pigeons deprived of different vitamins, showed among other things that they lost their immunity to anthrax when suffering from this deficiency diet. By restoring vitamin B to the diet given the pigeons, this loss of the immunity to anthrax was prevented. The vitamin B thus proved itself, he says, a true *immuno-tropho-stimulina*.

Parenteral Protein Therapy in Venereal and Skin Diseases.—Artom states that the injection of milk was extremely effectual in most of the fifty-eight cases of venereal ulcers with inguinal adenitis, the inguinal lesions promptly retrogressing, even buboes with fluctuation not requiring incision. No benefit was apparent in eczema but in two cases of toxic pruritus improvement was realized that has persisted to date. Gonococcus lesions showed some improvement but not as much as under vaccine treatment.

Health Certificate Required of Candidates for Matrimony.—Gasparini believes that the numerous objections to these certificates are outbalanced by the educative effect which they would have on the public. He extols the regulations in Norway and Sweden which provide for an exchange of health certificates between the contracting parties before marriage, but the marriage authorities do not inspect the certificates. The responsibility is thus left entirely to the contracting parties. He thinks the time is coming soon when it will be as much a matter of course to make inquiries about the health as it is now to make inquiries about the financial and social standing.

Rivista Critica di Clinica Medica, Florence

Nov. 25, 1921, **22**, No. 33

*Vaccine Therapy of Tuberculosis. G. Martinotti.—p. 385.
*Formaldehyd Serologic Test for Syphilis. A. Terzani.—p. 388.

Antibodies in Tuberculosis After Vaccine Treatment.—Martinotti agrees with Calmette that the antibodies are not the essential elements in the defense against infection but are merely the index of the reaction of the cells to the infection. When the cells are reacting properly to the invading agent, the latter is kept within bounds that are harmless. A vaccine therefore need not be adapted to kill the tubercle bacilli; all that is needed is to activate the cell defenses. The cells then will successfully repel the invasion. He advocates repeated injections of minute amounts of the vaccine to induce progressive immunization. Maragliano, on the other hand, attempts to transform conditions permanently with a single large injection, as in prophylaxis of smallpox.

Formaldehyd Serologic Test.—Gaté noticed that addition of liquor formaldehydi to blood serum caused it to gel in the presence of syphilis, and otherwise not. Terzani obtained conflicting findings in 226 tests with this method.

Gaceta Médica de Caracas, Venezuela

Aug. 31, 1921, **28**, No. 16

*Malaria in Cojedes District. G. Barreto Méndez.—p. 245. Cont'd.
Protection of Society Against the Venereal Peril. L. Razetti.—p. 253.

Malaria in Venezuela.—Barreto Méndez describes conditions in regard to malaria in the state of Cojedes where it is prevalent and severe. It is responsible for 3.5 per cent. of the general mortality, the death rate from malaria being 9 per thousand of the population.

Memorias do Instituto Oswaldo Cruz, Rio de Janeiro

1921, **13**, No. 1

*Helminths of Brazil. XIII. L. Travassos.—p. 5.
*The Urogonimus Genus. A. Lutz.—p. 136.

The Trichostrongylidae Leiper Family.—Travassos' monograph is accompanied by fifty-seven plates with a total of 249 representations of different members of this family. (A French translation accompanies the article.)

Urogonimus.—Lutz gives illustrations of what he says is a new form of Leukochloridium which he found in a mollusk. (In both Portuguese and German.)

Revista Médica del Uruguay, Montevideo

December, 1921, **24**, No. 12

*The Process of Ossification in Children. V. Escardó Anaya.—p. 565.
*Puerperal Gas Gangrene Septicemia. J. C. Estol and E. Hormaeche.—p. 573.
*Clinical Aspects of Anthrax. J. Princivalle.—p. 579.

Ossification in Children.—Escardó Anaya here presents his fifth communication on this subject, the results of roentgenray study of the hip in normal children of different ages.

Gangrenous Puerperal Septicemia.—The young woman presented intense jaundice and high fever and died the day after entering the hospital. Signs of a criminal abortion and *Bacillus perfringens* in the blood explained the gangrenous septicemia. The case teaches the importance of bacteriologic examination of the blood, with an anaerobic medium, to allow antigangrene serotherapy in time.

Anthrax.—Princivalle classifies the anthrax lesions in eight groups as he has studied them in 119 cases. Of the ninety-five cases of malignant pustule none proved fatal, but all died of the six with anthrax of what he calls the *ampolla brava* type. He urges study of the atypical cases in man and animals, as they are liable to fail to get the specific serotherapy, and thus may spread infection.

Semana Médica, Buenos Aires

Oct. 20, 1921, **28**, No. 42

Bacteriotherapy of Influenza and Its Sequelae. J. J. Vitón.—p. 511.
Nervous and Mental Features of Syphilis. N. V. Greco.—p. 518.
Prophylaxis of Trauma of the Eye. R. Argañaraz.—p. 520.
*Uncontrollable Vomiting of Pregnancy. J. A. Gabastou.—p. 525.
Lethargic Encephalitis. L. Almeida Huerta.—p. 528.
*Autovaccines in Therapeutics. F. Jauregui.—p. 530.
Classification of Influenzal Affections. R. Rivas Jordán.—p. 531.

Uncontrollable Vomiting of Pregnancy.—The vomiting in Gabastou's case had begun at about the sixth week of the eighth pregnancy, and had persisted for a month rebellious to all measures. There had never been any special tendency to vomiting in the previous pregnancies. As a last resort, Gabastou proceeded to evacuate the uterus, not letting any one know that the procedure was a sham. This psychotherapy answered the purpose, the vomiting and fetid ptyalism subsiding, and the pregnancy has continued its normal course. He cites a few instances of arrest of uncontrollable vomiting by a fright, a fire in the house, etc. After excluding organic causes in the digestive and genital apparatus in these cases, we can accept a nervous psychic factor which acts like a mordant to enhance the effect of the primary toxic cause resulting from the pregnancy. By psychotherapy we may be able to eliminate this psychic factor, and when the influence from this is out of the way, the organism soon masters the toxic factor.

Autovaccines.—Jauregui argues that the blood represents the actual situation of the organism in relation to infection, especially in relation to tubercle bacillus and associated infections. For example, in one sample of blood examined, 100 toxin units were found. The tubercle bacillus was responsible for 50; the streptococcus for 25; the staphylococcus for 10, and the tetragenus for 15. Injection of this blood supplied the stimulus for production of antibodies in exactly the proportions needed. With this autohemotherapy, he asserts, we apply a means for immunization which surpasses all others in its individual precision in relation to the infected organism.

Oct. 27, 1921, **28**, No. 43

*Laryngeal Complications of Influenza. E. V. Segura.—p. 547.

Laryngeal Complications of Influenza.—Segura gives the details of thirteen cases of laryngitis with edematous or phlegmonous infiltration or necrotic process in the throat, all with or without a tendency to spasmodic contraction. The influenza had been of a mild type in these cases, and the patients did not feel obliged to stay in the house. Those with edematous infiltration who obeyed his orders and did not expose themselves to the cold, and refrained from speaking and laughing, had no further spasms. One patient recovered after an emergency tracheotomy, and another died during the operation. The necrotic lesions in the woman's throat were coated with a false membrane. Another patient was a physician of 65, and symptoms of acidosis developed after the tracheotomy and proved fatal. Only one of the thirteen patients was a child.

Siglo Médico, Madrid

Oct. 8, 1921, **68**, No. 3539

Symptomatic Morphinomanias. C. Juarros.—p. 957.
Drinking Water of Escorial District. B. Hernández Briz.—p. 958.
Case of Mistaken Assumption of Cancer. T. Cobo Martínez.—p. 959.
War Surgery. F. Rico Belestá.—p. 961.

Oct. 15, 1921, **68**, No. 3540

Hysteria in Child. E. Fernández Sanz.—p. 981.
Trigeminal Neuralgia. D. A. Morales.—p. 983.
The Bacteriophagum. Algalia.—p. 984.
Intubation Versus Tracheotomy. Martínez Vargas.—p. 986.

Oct. 22, 1921, **68**, No. 3541

Causes of Failures in Intraspinal Treatment of Neurosyphilis. G. L. Lafora.—p. 1606.
Paraguay Tea in Therapeutics. F. J. Cortezo.—p. 1010. Cont'd.
Proteinemic Diathesis. M. Bermejillo.—p. 1013.

Nov. 12, 1921, **68**, No. 3544

Technic for Intraspinal Treatment of Neurosyphilis. J. M. de Villaverde.—p. 1085.
Diabetes Mellitus. F. Huertas Barrero.—p. 1089.
Tuberculin in Diagnosis and Treatment. A. Wolff-Eisner.—p. 1092. Cont'd.
Malaria in the Army. F. Blásquez Bores.—p. 1094.

Deutsche medizinische Wochenschrift, Leipzig

Dec. 1, 1921, **47**, No. 48

*Experimental Cancer and Irritation Theory. J. Fibiger.—p. 1449. Conc'n No. 49, p. 1481.
Cancer of Thumb in Cobblers. H. Stahr.—p. 1452.
Effect of Lumbar Anesthesia on the Smooth Musculature. A. Mayer.—p. 1454.
Clinical Signs of a Pyramid Affection Involving the Upper Extremities. P. Matzdorff.—p. 1458.
Significance of the Rugae of the Stomach for the Diagnosis of Gastric Ulcer. F. Eisler and R. Lenk.—p. 1459.
Attempts to Induce Changes in the Germinal Cell. L. Grote.—p. 1461.
Comparative Investigations with "Official Extracts" for the Wassermann Test. C. Stern.—p. 1463.
Effect of Hydrogen-Ion Concentration on Vital Staining. Pohle.—p. 1464.
Migration of Projectile into Sound Knee Joint. F. Hagner.—p. 1465.
Treatment of Incontinence of Urine. H. Florcken.—p. 1466.
Chronic Joint Affections in General Practice. G. Ledderhose.—p. 1466.

Experimental Cancer.—To be reviewed elsewhere.

Dec. 8, 1921, **47**, No. 49

Resisting Powers of Pathogenic Germs. H. Ziemann.—p. 1483.
Inhibiting Action of Formaldehyd in Serologic Tests. Dold.—p. 1485.
A New Flocculation Reaction in Syphilis. H. Hecht.—p. 1487.
*Residual Nitrogen Content of the Blood. M. Rosenberg.—p. 1488.
*Intracardiac Injection of Epinephrin. G. Kneier.—p. 1490.
Intracardiac Injections: Anatomy and Technic. Vogt.—p. 1491.
*Intraspinal Injection of Air (Encephalography). A. Bingel.—p. 1492.
Value of Gum-Salines in Loss of Blood. F. Külz.—p. 1493.
Diagnostic Nerve Blocking. K. Scholl.—p. 1494.
Partial Excision of Nail in Paronychia. A. Hintze.—p. 1494.
Biology of the Skin. O. Gans.—p. 1495.
*Dangers of Petrolatum Vehicle for Phenol. Boenninghaus.—p. 1497.
Unreliable Clinical Thermometers. H. Kritzler.—p. 1497.
Tumors in General Practice. G. Ledderhose.—p. 1498.

The Residual Nitrogen Content of the Blood in Relation to the Residual Nitrogen Content of the Body.—Rosenberg found that the residual nitrogen content of the blood is not an absolutely accurate measure of the total retention of nitrogen in the body, as there is not a complete parallelism between the retention in the blood and in the tissues. He, therefore, never confines himself to an estimation of the residual nitrogen content of the blood alone, but determines also the retention of urea, creatinin and indican, in any effort to judge the character of renal insufficiency.

Intracardiac Injection of Epinephrin in Acute Cardiac Paralysis.—Kneier holds that in the presence of acute paralysis of the heart, when other resuscitative measures fail, there is an absolute indication for the intracardiac injection of epinephrin. This injection should be made not later than three minutes after the patient stops breathing, as by-effects are scarcely to be feared and there are no technical difficulties.

Technic of the Intralumbar Injection of Air in Connection with Encephalography.—Bingel discusses his revised technic for encephalography or the roentgenographic representation of the brain. The method is based on the injection of air into the lumbar portion of the dural sac, while, at the same time, corresponding quantities of spinal fluid are removed. Two fine needles are introduced at the same time, one for the air, the other for the escaping fluid. At the Brunswick meeting of the Gesellschaft deutscher Nervenärzte, held in September, 1921, he reported 100 cases in which encephalographic data had been secured in this manner. No serious damage to patients resulted from the experiments though such by-effects as headache, dizziness and nausea were sometimes produced. The diagnostic results were very satisfactory and in a few cases even favorable after-effects were noted.

[Dandy's early work in roentgenography of the brain after injection of air into the spinal canal was described in THE JOURNAL, Nov. 8, 1919, p. 1468.

Liquid Phenol in Liquid Petrolatum a Dangerous Substitute for Phenol in Glycerin.—Boenninghaus reports that a young physician prescribed as ear drops for a boy of 10, suffering from earache, liquid phenol in liquid petrolatum. Phenol does not dissolve in liquid petrolatum, but is precipitated undissolved. In this instance a glass dropper was used to administer the drops, in which case the pure phenol collects for a moment in the tip and is injected at first alone. The results for the child's ear were terrible. Half of the tympanic membrane was destroyed, and the external meatus and the auricula were badly corroded.

Medizinische Klinik, Berlin

Nov. 27, 1921, **17**, No. 48

*Radiotherapy of Tuberculosis. O. de la Camp.—p. 1435.
*Testicle Transplantation in Man. Enderlen.—p. 1439.
*Changes in Diseases. A. Strümpell.—p. 1442.
*Treatment of Varicose Veins. Linser.—p. 1445.
*Whooping Cough in Adults. A. Schwenkenbecher.—p. 1447.
Microscope for the Capillaries. O. Müller.—p. 1448.
Collective Inquiry on Treatment of Septic Abortion.—p. 1450. Cont'd.
*Simplified Test for Abderhalden Reaction. E. Abderhalden.—p. 1453.
Obstetric Cases at Emergency Hospital. E. Runge.—p. 1454. Cont'n.
*Radiotherapy of Sarcoma. Holfelder.—p. 1456.
Recent Literature on Operative Orthopedics. Peltesohn.—p. 1458.

Radiotherapy of Tuberculosis.—This is the opening lecture of a graduate course on this subject. Da la Camp exclaims "We are all children of the sun. The entire organic life of our planet is conceivable only in connection with the central sun source of light and energy, and it is amazing that the worship of the sun in primitive religions and the helioses of the Greeks, the solarium of the Romans and the sonnenheil mountains of the Germanic tribes have been so little heeded and actually forgotten for so many centuries. From custom, from indolence, from fashion, from the example of others, human beings have shut off the skin more and more from the health-bringing sunlight." He discusses the light, heat and chemical rays from the physical, chemical and biologic standpoints remarking in conclusion "Sunlight, radium and the roentgen rays act by arousing and strengthening the natural defensive forces and directing their energy toward the foe. It is not a specific mode of treatment, and it profits by all effectual adjuvants of any kind, tuberculin treatment in particular, as the aim of ray treatment is after all to induce a toxin-proof condition by an autotuberculinization." We are merely returning to the empiric heliotherapy of the ancients. "'Sol est remediorum maximum' wrote Pliny the elder."

Transplantation of Testicles.—Enderlen reports four experiences of this kind, and his clinical results and theoretical reasoning have convinced him that testicle transplantation offers no chance of success.

Change in Frequency and Character of Diseases.—After living elsewhere for twenty-five years, Strümpell resumed in 1910 his charge of the medical clinic at Leipzig, and he here compares his impressions of diseases now with his earlier experiences. Chlorosis, chronic gastric catarrh, and emphysema have almost disappeared from the record of the clinic, thanks to greater precision in diagnosis, but tabes is just as frequently encountered as ever. He knows of whole series of cases of tabes that were given intensive treatment from the very first infection with syphilis. The classic picture of tabes is less common than the cases with atypical features, and possibly the intensive treatment may be responsible for this. The diagnosis of tabes was always comparatively easy and certain. He declares that the arsphenamin question is by no means definitely settled. His experience has demonstrated, he says, that arsphenamin frequently acts as an agent provocateur for syphilitic injury of the nervous system. Impartial comparison of neurosyphilis before and since the introduction of arsphenamin demonstrates beyond question that the so-called neurorecurrence forms of early syphilitic disease of the nervous system and meninges are quite frequent now while they were, at most, entirely exceptional before. His impression is that this is a frequently encountered unfavor-

able modification of the course of syphilis for which only the direct influence of this commonly used drug can be responsible.

Injection Treatment of Varicose Veins.—Linser describes the technic, the by-effects and the results in his ten years of experiences with the local intravenous injection of 0.5 or 1 c.c. of a 0.5 or 1 per cent. solution of mercuric chlorid to induce local thrombosis. In twenty four hours fully half of the drug injected has disappeared from the blood. He has never had any serious by-effects and he has never heard of any since Hammer's fatal case. The needle is introduced into the vein and then the limb is raised, to empty the vein, before the drug is injected.

Whooping Cough in Adults.—Schwenkenbecher describes an epidemic of pertussis that ran through a connecting set of five offices, only those escaping who had had whooping cough before. Only a few developed the characteristic whoop, but all affected had a severe cough and catarrhal affection persisting in some for several months and transmitted to their families at home. He protests against the assumption that pertussis is a children's disease, although the greater self control of adults may mask the clinical picture.

Simplified Technic for Abderhalden Reaction.—Abderhalden recalls that the dialysis method of demonstrating the defensive ferments, the polarization method, refractometry (Pregl) and the interferometry method of P. Hirsch all give concordant findings, but the technic is complicated. From his experience to date, a simpler and more direct method which he has devised seems equally dependable. The serum under examination is poured into a test tube containing the organ tissue for the test, sterilized by boiling. The tube is then plugged and incubated at 37 C. With placenta tissue, for example, the fluid in the tube shows no change if the serum came from a nonpregnant woman, but if from a pregnant woman, the fluid becomes turbid and finally entirely opaque. The placental tissue also shows traces of disintegration at the points of contact. These changes under the microscope suggest ferment action when the pregnancy is not far advanced. In the ninth and tenth months, the reaction is not much different from that with serum from the nonpregnant. Tests with serum from cases of cancer, dementia praecox, paresis, etc., gave analogous reactions, as he shows with illustrations of a set of tubes. The serum must be free from any trace of hematin and fat. He draws the blood, fasting, on this account.

Roentgen-Ray Treatment of Sarcoma.—This review of recent literature on this subject shows plainly, Holfelder reiterates, that roentgen-ray treatment of sarcoma is now the chosen method, which seems to give better results than operative treatment. Everything depends on the correct dosage.

Münchener medizinische Wochenschrift, Munich

Nov. 18, 1921, **68**, No. 46

*Irritation and Irritability. A. Bier.—p. 1473. Conc'n No. 47, p. 1521.
The Problem of Proteotherapy. A. Schittenhelm.—p. 1476.
*Clinical Observations on Endocarditis Lenta. P. Morawitz.—p. 1478.
Rachitis as a Deficiency Disease. W. Stoeltzner.—p. 1481.
*Treatment of Rachitis. F. Lehnerdt and M. Weinberg.—p. 1482.
Relaxation of Anus with Abscess in Douglas' Pouch.—Läwen.—p. 1484.
*Arteriotomy to Relieve Lung Edema. Eckstein and Noeggerath.—p. 1485.
Hereditary Pathology of the Skin. H. Werner Siemens.—p. 1487.
Carrel-Dakin Treatment of Infected Wounds. K. Schlaepfer.—p. 1490.
Injections of Cod Liver Oil in Dermatology. W. Patzschke.—p. 1492.
Treatment of Puerperal Fever. E. Bumm. —p. 1494.

Irritation and Irritability.—Bier discusses the historical development of the theory of irritability as ascribed to muscles, nerves and all live tissues. According to Virchow, whose works Bier thinks might be read with great profit by a wider circle of physicians than at present, irritability is the criterion of every living cell and of every cell derivative. This property manifests itself by the fact that living elements can be aroused to certain activities by stimuli from without; that is, from other elements of the same or other organisms, or from foreign bodies. Every form of life activity presupposes an excitation, an irritation. Irritability is, in other words, the main characteristic of living tissues. The conception of irritation presupposes a reaction. Irritability is not life itself; it is only the criterion of life. It presupposes a definite physical and chemical constitution of the cell, on which the irritation acts. As to conductivity, this may take place not only through the nerves but also through the blood stream and the neighboring cells.

Endocarditis Lenta.—Morawitz is surprised to find that the syndrome of chronic, septic endocarditis is still so little known. Of the nineteen cases that have come to his attention during the last two or three years, only two or three had been previously correctly diagnosed. Most of the patients brought to the clinic a diagnosis of "incipient tuberculosis" or "anemia." Even in the cases in which a cardiac defect had been diagnosed, no attempt had been made to use this partial diagnosis to explain the whole clinical picture. In one instance a colleague objected that the heart defect had existed since youth and that the auscultation phenomena and the size of the heart had not changed, so that it was not likely that the febrile condition which had but recently appeared was in any way connected with the heart defect. In another case, on account of a tumor of the spleen and high temperature in the evening, malaria was suspected, and a diastolic murmur at the aorta was not regarded as having any connection with the disease in hand. Reports indicate that chronic, septic streptococcus endocarditis has become more frequent in Germany in recent years. Morawitz suggests that, if a heart defect (more particularly, an aortic murmur) is diagnosed, the question be considered whether the other symptoms are not associated with it. If, furthermore, anemia, tumor of the spleen and remittent fever are in evidence, the diagnosis of slow endocarditis becomes more plausible. The absence of streptococci in the blood does not exclude such a diagnosis. In addition to the rather frequent, though often inconspicuous hemorrhagic focal nephritis, endocarditis lenta may have associated with it diffuse, chronic glomerulonephritis, with symptoms of renal insufficiency. Also aneurysms forming spontaneously in unusual places point to endocarditis lenta.

Treatment of Rachitis with Epinephrin.—Lehnerdt and Weinberg have used epinephrin in the treatment of thirty cases of rachitis, in twenty-one of which the patients were either cured or much improved. They regard the subcutaneous use of epinephrin, together with calcium carbonate, as a valuable clinical method in all severe cases of rachitis; especially where the ordinary antirachitic treatment does not accomplish results. They succeeded, in most cases, in changing over the whole mental and physical status and getting the children to walk in a short time, often a marked improvement in the mental condition and in the appearance being noted at the end of a week. It was found that about the only refractory cases were those in which the rachitis was not solely responsible for the backward development.

Arteriotomy in Place of Venesection in Pneumonia and Lung Edema.—In the presence of acute heart weakness in consequence of disturbances in the pulmonary circulation, such as occasionally occurs in inflammatory processes of the lungs or in lung edema, Eckstein and Noeggerath, on the basis of results in four cases, recommend severing the radial artery and the removal of from 100 to 150 c.c. of blood in the case of children from 1 to 4 years old. It should, however, be done only as a last resort when ample venesection fails to produce results. They ligated the artery afterward.

Wiener klinische Wochenschrift, Vienna

Oct. 27, 1921, **34**, No. 43

*Cardiac Asthma and Stenocardia. F. Chvostek.—p. 519.
*Specific Treatment of Tumors. R. Bauer and W. Nyiri.—p. 520.
Hormone Therapy. O. Fürth.—p. 521.
Trials of the Bacteriophagum in Disinfection. T. Watanabe.—p. 522.

Cardiac Asthma and Angina Pectoris.—Chvostek protests that the behavior of the peripheral vessels and the influence of the nervous system as factors in cardiac asthma, stenocardia and angina pectoris have been comparatively neglected hitherto. He explains the nervous mechanism of the paroxysm, attributing the characteristic pain to a combination of neuralgia and reflex phenomena. Overexcitability of the subcortical spinal centers and vegetative nervous system may induce pain phenomena exactly like those with organic disease of heart and vessels.

Specific Treatment of Tumors.—Bauer and Nyiri recall that specific treatment of tumors consists in incorporating in the tumor carrier, in some manner, tumor material selected on the basis of various etiologic factors. The most common method has been autolysate therapy, which they have also tried but without satisfactory results. The researches of Joannovics (1920), who by the injection of carcinoma solution obtained by trypsin digestion secured favorable results, caused them to renew their investigations. They acted on the assumption that the given effects of such solutions were due to the presence of considerable quantities of only slightly changed albumin substances of high molecular weight. The chief problem, therefore, seemed to be to convert the carcinoma substance into a soluble albumin substance of high molecular weight, differing as little as possible from the mother substance. They treated the previously prepared carcinoma tissue with steam and after many trials succeeded in dissolving 80 per cent. of the substance, and prepared a solution containing a high percentage of this atmidalbumin. From this solution they were able to derive about 60 per cent. of the mother substance in the form of atmidalbumin and atmidalbumose. These substances were first used in animal experimentation and then were tried in incurable carcinoma. In such incurable cases, no harmful effects were noted, nor was there any favorable reaction, as was to be expected. Later, they injected autogenous preparations into patients who had been operated on, to which they reacted with chills and slight rises of temperature, whereas, after injection with heterogenous solutions, no reaction was ever observed. The autogenous preparations were given in 0.05 gm. doses, dissolved in 5 cm. of water or physiologic sodium chlorid solution, and reboiled. The injections were made intravenously, at intervals of several days. They are not ready as yet to report on final results, but believe they are safe in recommending the method as being simple and harmless, and in harmony with the results of recent research in this field.

Zeitschrift für Geburtshülfe und Gynäk., Berlin

Nov. 12, 1921, **84**, No. 2

*Serologic Tests in Pregnancy. A. Stühmer and K. Dreyer.—p. 289.
Do Anatomic Changes in Fetal Membranes Influence Time of Rupture? H. Naujoks.—p. 304.
*Retransfusion of Extravasated Blood. R. Zimmermann.—p. 335.
*Febrile Abortion. W. Offermann.—p. 356.
Transmission of Bacteria Between Parturients and the New-Born. E. Clauss.—p. 384.
*Ruptured Tubal Pregnancy. E. Löhnberg.—p. 404.
Weight of the Pregnant. H. Lorenzen.—p. 426.
Nature of Saprophytes in Female Genital Canal. Sternberg.—p. 447.
Vaccine in Diagnosis and Treatment of Gonorrhea in the Female. E. R. von Weinzierl.—p. 468.

Unreliability of Serologic Diagnosis of Syphilis During Pregnancy.—Stühmer and Dreyer applied parallel Wassermann and other serologic tests twice a week in their maternity cases, and they thus have a series of 1,000 tests of parturients' serum, with 2,500 control tests of known syphilitic or nonsyphilitic serum. These experiences show that the serum of healthy women may respond positively to the Wassermann test during pregnancy and childbirth. Unreliable findings were obtained in fully 10 per cent. The retroplacental blood is especially liable to respond misleadingly, and also the blood in the umbilical vein. The fewest erroneous responses were obtained with the Sachs-Georgi flocculation test.

Retransfusion of Extravasated Blood.—Zimmermann concludes from his experimental and clinical research that the peritoneum is able to resorb extravasated blood freely, and thus the erythrocytes and other elements in fluid blood in the absence of infection may pass unharmed back into the blood. He advises, therefore, with a ruptured tubal pregnancy to clear out the clots and leave to the natural forces the resorption of the fluid blood. This occurs so rapidly that the erythrocytes reach the blood in a still functionally capable condition. Only when the pulse is too weak and growing weaker, is it best to retransfuse the blood to hasten matters, as a last resource. In a recent case the woman was pulseless, the abdominal cavity full of fluid blood, with compact clots in the small pelvis. He sutured the tube, removed the clots, and sutured the abdominal incision, the whole intervention complete in 18 minutes, leaving the 1 or 1½ liters of fluid blood undisturbed. Percussion the following morning showed no trace of the fluid, and the woman's aspect and condition were normal. The extravasated erythrocytes in his cases never seemed devitalized, even when the rupture had occurred up to eight days before. His experimental and clinical experience suggest that it might be better in transfusion of blood from another person to inject it directly into the abdominal cavity, instead of into a vein.

Febrile Abortion.—Offermann reviews the experiences in Winter's service. They all testify in favor of refraining from active intervention until the fever and streptococci have disappeared, especially with criminal abortion.

Ruptured Tubal Pregnancy.—Löhnberg advocates the complete removal of the extravasated blood. Reexamination of patients treated in this way has confirmed the advantages of this, he says, thus warding off infection of the extravasated blood. In fourteen cases he reinfused the extravasated blood, injecting thus between 500 and 1,150 c.c. of blood. It was infused, still warm, after defibrination by stirring with a glass rod, using a glass cylinder, tube and porcelain funnel and filtering through eight layers of mull. The results, he says, were the best imaginable, with no disagreeable by-effects. He declares that this retransfusion of the women's own blood tides them past the danger point, when they have been brought in *in extremis*, as so often happens. In about a sixth of the women with tubal pregnancy, who became pregnant again, the ovum became embedded in the other tube sooner or later, with a second tubal pregnancy drama. The work issues from Füth's service at Cologne, and lists a bibliography of sixty-eight titles.

Zentralblatt für Chirurgie, Leipzig

Nov. 5, 1921, **48**, No. 44

Notes on Osteotomies. G. Perthes.—p. 1614.
The Mediastinal Emphysema. W. Jehn.—p. 1619.
Contrast Suspensions for Pyelography. E. Pflaumer.—p. 1623.
Increased Frequency of Congenital Clubfoot and Decreased Incidence of Congenital Luxation of the Hip Joint. Blencke.—p. 1625.
Treatment After Suprapubic Prostatectomy. Geiser.—p. 1627.

Nov. 12, 1921, **48**, No. 45

*Excision of Portion of Stomach for Ulcer. Ostermeyer.—p. 1648.
*Resection or Gastro-Enterostomy for Ulcer. Rosenbach.—p. 1654.
*Care of the Stump in Goiter Operations. E. Liek.—p. 1656.

Partial Resection for Gastric Ulcer.—Ostermeyer emphasizes that in the crescent-shaped, plastic longitudinal excision of the portion of the stomach wall involved, combined with pyloroplasty, he thinks he has found a procedure that does away with the main objections to other methods. The technic is shown in two illustrations.

Resection or Gastro-Enterostomy for Gastric Ulcer Distant from Pylorus.—Rosenbach states that, since gastro-enterostomy does not always give absolutely certain results, it is well to weigh carefully the indications for resection and gastro-enterostomy in each individual case.

Care of the Stump in Goiter Operations.—Liek approves in general Capelle's encapsulation of the goiter remnant (for abstract, compare THE JOURNAL, Oct. 8, 1921, p. 1216), but raises two objections. First, the external capsule, at least posteriorly, is not always fully developed, as Capelle also admits. Secondly, the anterior portion of the external capsule is at the same time the posterior fascia of the long laryngeal muscles. If, as is customary, the muscles that are divided in the midline are sutured together again, the so-called external capsule will be brought over the goiter remnant. Any special suturing to the goiter stump would, therefore, appear superfluous. He agrees that a suture through the parenchyma of the stump constitutes the best means of avoiding late infection, but such a suture following resection is not always possible, owing to the friability of the stump. In the last twelve operations he has tried taking the stitches in a longitudinal direction—from pole to pole—instead of transversely. This is surprisingly easy. In the region of the poles the capsule is resistant and adapted to suturing, though elsewhere it may be thin and friable. Liek discusses other advantages of this, and explains his technic of drainage.

Zentralblatt für Gynäkologie, Leipzig

Oct. 29, 1921, **45**, No. 43

*The Kielland Forceps. A. Mayer.—p. 1557.
The Etiology and Treatment of Colpitis Due to Trichomonas. S. Stephan.—p. 1565.
So-Called Essential Thrombopenia. O. Gragert.—p. 1569.
A Correction. M. Hirsch.—p. 1577.
Extraction of the Aftercoming Head of Dead Fetus. E. Sachs.—p. 1578.

The Kielland Forceps.—Mayer's statements in regard to this forceps are based on his experience in thirteen cases in the University Women's Hospital, Tübingen. The Kielland instrument was introduced five years ago. Some have condemned the forceps as being difficult to apply. Mayer says, however, that when the technic is thoroughly understood the application is just as easy as with the ordinary forceps. He finds the principal indications for the forceps within the limits of the normal pelvis. High head presentations constitute the main field of its use. High face and brow presentations in particular can be managed with the Kielland forceps with better chances of success than with the usual type of forceps. For a funnel shaped pelvis the Kielland forceps seems to offer distinct advantages. It does not, however, in Mayer's opinion, extend the indications for the use of forceps in the direction of a narrow pelvis. For Mayer it does not take the place of other forceps but merely supplements them. (The Kielland forceps was described in THE JOURNAL, July 9, 1921, p. 142.)

Zentralblatt für innere Medizin

Oct. 29, 1921, **42**, No. 43

*Exophthalmic Goiter. E. Seitz.—p. 842.

Exophthalmic Goiter and the Sympathetic Nervous System.—Seitz states that among the factors outside of the thyroid gland, a pathologic condition of the sympathetic nervous system has often been held to be the real underlying cause of exophthalmic goiter. Since, according to physiologists, the behavior of the blood sugar is a reliable index for the condition of the sympathetic nervous system, he undertook to test the blood sugar metabolism in fifty cases of strumectomy. A few days before the operation he examined the patient for the blood sugar value, fasting, and also an hour after test ingestion of 100 gm. of glucose. In a portion of the cases the same test was made with 0.75 mg. of epinephrin. In a large majority of the cases, the same tests were made two weeks after the operation, and in a few instances after still longer intervals. From his findings, Seitz concludes that very frequently—but by no means constantly—in affections of the thyroid gland the sympathetic nervous system is abnormally irritable. This is most pronounced in cases of exophthalmic goiter. He thinks that his researches constitute a strong argument against the sympathetic neurosis theory; more especially since, in some cases of severe exophthalmic goiter, no disturbance of the sympathetic system was found. Along with other clinical symptoms, the behavior of the blood sugar would seem a valuable aid in judging of the severity of a given case. He gives the figures for the different groups tested, and adds that they provide further conclusive testimony as to the value of operative treatment of exophthalmic goiter.

Tohoku Journal of Experimental Medicine, Sendai

Nov. 30, 1921, **2**, No. 4, German Edition

*The Lymph. S. Osato.—p. 325.
*Research on Whales. M. Takata.—p. 344. Idem. M. Sudzuki.—p. 355.
*Agglutinating Properties of Bacilli. K. Aoki and S. Kondo.—p. 357.
*Types of Agglutination. VIII. K. Aoki and T. Konno.—p. 376.
*Viscosity of the Blood. T. Odaira.—p. 396.
*Sugar Content of Blood After Cold Puncture. S. Morita.—p. 403.

The Lymph.—In this first communication, Osato discusses the comparative antibody content of blood and of lymph, and of means to influence it by lymphagogues. The research was done on fifteen dogs actively immunized against typhoid and sheep erythrocytes. Lymphagogues of the peptone type were most active in this respect.

Research on Cetacea.—Takata has been analyzing the milk of the whale. He had 2 liters at his disposal, and compares the results of his analysis with four similar reports on record. Sudzuki describes similar analysis of the pericardial fluid from a whale.

Modification of Agglutination of Typhoid Bacilli.—Aoki and Kondo conclude from their extensive research that typhoid bacilli grown in homologous immune serums become so modified that the changes are equivalent to a new race.

Coagglutination.—In this eighth report on their research on agglutination, Aoki and Kondo discuss the coagglutination of paratyphoid B and mouse typhoid bacilli.

Oxygen Content of Blood in Relation to Viscosity.—Odaira has demonstrated that oxidation of the blood reduces its viscosity. (His article and the following one are in English.)

Blood Sugar Content of Cold Punctured Rabbit.—Morita excluded the central mechanism of the regulation of the body temperature by a modified interbrain puncture or cold puncture, as he prefers to call it, and studied the effect on the sugar content of blood and urine.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 29, 1921, **2**, No. 18

*History of Dermatologic Society. G. J. Teljer.—p. 2141.
*Skin and Venereal Diseases in the Netherlands. J. F. Maas.—p. 2146.
*Cosmetics in Ancient Rome. M. A. van Andel.—p. 2164.
Radiotherapy in Dermatology. W. H. Jolles.—p. 2177.
Diagnosis in Dermatology. J. W. van der Valk.—p. 2184.
Albinism. S. Mendes da Costa.—p. 2187.
*Parallel Tests of Spinal Fluid in Syphilis. C. Goedhart.—p. 2190.
*Zinc Dressing for Leg Ulcers. L. M. de B. Wenniger.—p. 2198.
Adenoma Sebaceum of Pringle Type. W. L. L. Carol.—p. 2202.
Trichophyton Marginatum. D. Muijs.—p. 2205.
*Scabies in Lepers. J. J. Bloemen.—p. 2207.
Roentgen Ray Treatment of Trichophytosis. E. Penso.—p. 2210.
Case of Fox and Fordyce Disease. L. O. Boelstra.—p. 2213.
Case of Lymphangioma. K. Edel.—p. 2215.
Case of Idiopathic Xanthoma Disseminatum. Vas Nunes.—p. 2219.
*Case of Gummatous Spondylitis. A. van der Hoop.—p. 2221.

The Adventures of the Netherlands Dermatologic Society.—This gala issue of the *Tijdschrift* is dedicated to the Netherlands dermatologists on the twenty-fifth anniversary of their organization. Teljer reviews its history. Maas compares the status of skin and venereal diseases when it was founded with present conditions. Van Andel cites from ancient writers to show the use of cosmetics in their day in Rome.

The Four Reactions in Syphilis.—Goedhart found the lumbar puncture fluid normal in 51 of 70 syphilitic patients free from all symptoms of neurosyphilis at the time. In 19, one or more of the "four reactions" were positive, as also in 18 others with symptoms of neurosyphilis. The Wassermann test in the blood of all the 88 was negative. He tabulates the responses to the various tests in the symptomless cases, and also in those with symptoms of neurosyphilis, and compares them with the ultimate outcome. In 2 cases, nothwithstanding early and vigorous treatment, the syphilis progressed to tabes or paresis. This suggests the possibility, he says, that the treatment was so vigorous that it injured the central nervous system. His experience impels him to warn against the danger of damage from the so-called abortive treatment. He advocates intermittent mixed treatment, begun as early as possible, keeping the blood and spinal fluid under supervision. With any signs of meningitis, whether there are other manifestations or not, treatment must be continued until the blood and spinal fluid show no further positive reactions.

Treatment of Leg Ulcer.—Wenniger expatiates on the social importance of the zinc-glue bandage for leg ulcer which allows the patient to be up and about, and the old rebellious ulcer heals promptly under its influence. After cleaning with benzine he covers the ulcer with a disk of rubber tissue or oiled silk and then smears the leg from toes to knee with the glue, liquefied by heating. The formula is 450 c.c. distilled water; 200 c.c. white gelatin; 200 c.c. glycerin and 150 cc. zinc oxid. When the entire leg is smeared thick with this, a 10 cm. wide gauze bandage is wound from toes to knee. Cotton is then placed over the ulcer and an outer bandage applied. It is left untouched for from one to four weeks, and is then cut off and a new one applied after the benzin cleaning, powdering, and, if there is much eczema, salving with Lassar's zinc and starch paste. Ulcers of years' standing heal under this in a few weeks or months, and years may elapse before there is recurrence, if ever.

Norwegian Scabies.—Only thirty-two cases of this are known, including the one here described. It is a special form

of scabies occurring in lepers. The leprosy prevents any itching from the scabies.

Gummatous Spondylitis.—The man of 53 had had remittent pains and constant stiffness in the lower spine for twenty-five years, and roentgenoscopy confirmed the probable gummatous nature of the process. No effect from specific treatment was evident but some improvement followed a course of heliotherapy.

Acta Pediatrica, Stockholm

Dec. 15, 1921, **1**, No. 3

*The Spasmophilic Diathesis. W. Wernstedt.—p. 257.
*Treatment of the Exudative Diathesis. S. Monrad.—p. 271.
*Cerebral Rachitis and the Mind. C. Looft.—p. 282.
*Stomach Functioning in Young Children. P. Hertz.—p. 298.
*Fatal Aplastic Anemia in Boy of Four. H. Spak.—p. 310.
*Index of State of Nutrition. U. Hjärne.—p. 324.
Proceedings of Northern Pediatrics Congress.—p. 337. In English.

Cause and Cure of Spasmophilia.—Wernstedt declares that his research has demonstrated that the difference in the action of cow's milk and human milk on children with a tendency to spasmophilia is the result of the different relative proportions of salts and sugar in the two kinds of milk. The low sugar content in cow's milk allows the salts in the milk to exert too potent an action. On the other hand, the high sugar content of breast milk prevents its having a spasmogenic action. By adding 55 gm. of sugar to ⅓ liter of milk with 12 or 13 per cent. cream, and adding water to 1 liter, we obtain a mixture that contains the ingredients of breast milk and in about the same proportions and calory value. With this mixture he has forged, he thinks, the last link in the chain connecting spasmophilia with the ratio between the salts and sugar in the milk. The effect of this mixture on spasmophilia, he says, actually surpassed that of a change to breast milk. Among his other experiments were some with breast milk concentrated to one third or one fifth, thus bringing the salt content to equal that of cow's milk.

Cause and Cure of the Exudative Diathesis.—THE JOURNAL has already chronicled Monrad's assertion that animal fat acts like a poison in children with the exudative-lymphatic diathesis. He here gives a number of examples to show the benefit that follows exclusion from the diet of all forms of animal fat, including cream, butter, egg yolk, bacon, and fat meats of any kind. For infants less than a year old, he proscribes both breast milk and whole cow's milk, allowing only skimmed milk and skimmed milk soup, oatmeal and other gruels, soft mashed potato, apple sauce, etc. For older children he forbids whole milk, cream, butter, bacon, and other fat meats, allowing only skimmed milk, soups, vegetables, gruels, porridge, fruit, honey, marmalade, lean meat, and cocoa and other vegetable fats. No cod liver oil should be taken. The benefit from dropping animal fat from the diet is as pronounced in the lean children of this type as in the doughy, pasty type. Overfeeding in itself is not especially harmful in the exudative diathesis; the danger is from the animal fat in the diet. This and the preceding article are in German.

Development of the Mind in Rachitis.—Looft applied four tests to seventy-two normal children and to 134 rachitic children to estimate their mental capacity. He found that the rachitic infants and older children were almost always comparatively backward in the evolution of their intelligence. This backward development was most evident in children 1 or 2 years old. Effectual treatment of the rachitis has a remarkable effect in hastening mental development. A deficit in calcium and in phosphorus is probably responsible for this relative backward development. Even after clinical recovery from the rachitis, the children are not always quite as bright as others of their age.

Stomach Functioning in Children.—Hertz found the secretion of acid in twenty-four of thirty apparently healthy children approximately the same as in adults except that it averaged a little less. In 20 per cent. pronounced achylia was found, although there were no symptoms from it. Some infectious or toxic influences are probably responsible for the achylia. It may long remain latent or may induce symptoms and dyspepsia and frequently recurring diarrhea. Two of the six achylia children were reexamined later and normal secretory conditions seemed to have been restored.

Aplastic Anemia.—Spak adds another case to the eighteen he has found on record of true aplastic anemia with no tendency to regeneration of the blood. Untreated, it is always fatal. Parkinson's patient recovered after intravenous injections of blood although quite a severe shock followed the second infusion of 500 c.c. of citrated blood in the 12 year old child.

Index of Nourishment.—Hjärne applied the Pirquet pelidisi index to 1,713 boys and 1,016 girls in two Swedish schools, and tabulates the findings. They fail to confirm the reliability of this index, at least for the ages between 7 and 18.

Hospitalstidende, Copenhagen

Oct. 26, 1921, **64**, No. 43

*Surface Tension of Disinfectants. T. Hansen.—p. 673. Conc'n.

Alcohol Increases Effect of Disinfectants.—Hansen's extensive research has apparently demonstrated that addition of a small amount of alcohol to a disinfectant reduces the surface tension and materially enhances the bactericidal power. As a typical example of what can be accomplished in this line, we quote only his tests with anthrax spores: 0.1 normal hydrochloric acid required over twenty-nine hours to kill anthrax spores, the surface tension 0.983; 70 per cent. ethyl alcohol required over thirty-one hours to kill the spores, the surface tension, 0.342. On adding the alcohol to the hydrochloric acid, the anthrax spores were killed in half an hour, the surface tension being the same, 0.342. The disinfectants, the action of which was thus multiplied many times by addition of 10 to 20 per cent. of ethyl alcohol or 5 to 10 per cent. of propyl alcohol, were hydrochloric acid, phenol, mercuric chlorid and chromic acid. He theorizes that the alcohol renders the membrane more permeable, and that this effect depends on the surface tension.

Nov. 2, 1921, **64**, No. 44

*Electrodiagnosis. I. B. Eliassen.—p. 689. Conc'n No. 45, p. 705.

Electrodiagnosis.—Eliassen describes some sources of error and how to avoid them in electric tests of muscles, and discusses the interpretation of the findings with the latest technics.

Nov. 16, 1921, **64**, No. 46

*Intracranial Aneurysms. T. Pedersen.—p. 721.

Intracranial Aneurysms.—Pedersen reports three cases of an intracranial aneurysm, with the necropsy findings: a girl of 13, a man of 61 and a woman of 39. In the woman, syphilis and trauma can be excluded. He is inclined to incriminate influenza as a causal factor, responsible for the changes in the walls of the vessels.

Nov. 23, 1921, **64**, No. 47

*Fatal Poisoning from Injection of Calomel. K. H. Backer.—p. 737.

Fatal Poisoning from Calomel.—The calomel had been injected intramuscularly, 1 c.c. of a 10 per cent. suspension at eleven and twelve day intervals, while neo-arsphenamin was being given at shorter intervals. The day after the third injection of calomel, an eruption developed with gingivitis, fever and other signs of mercurial poisoning, fatal in a week. The patient was a man of 48 who had never been treated for syphilis until symptoms of tabes developed. The second patient was a woman of 48 with recurring angina pectoris, stenosis of the aorta, and aneurysm. She died six days after the third injection of 5 cg. of calomel at seven day intervals. This brings to 16 the total number of such fatal cases on record, but in 10 of these the doses had been very large, up to 10 cg. repeated in a week. Backer adds that resorption from the deposit of calomel may be rapid and capricious, or there may be a pronounced idiosyncrasy to mercury and when symptoms developed, we are impotent to check them. The deposit was resected in 8 of the cases, but without much evidence of benefit, while the mutilating operation is a strain on the debilitated patients. No fatalities have ever been reported from the use of the benzoate of mercury. Mercuric chlorid by the mouth, a tablespoonful three times a day of a solution of mercuric chlorid, 20 cg. to 300 gm., usually entails swelling and tenderness of the gums, which testify to its potency. Associated with neo-arsphenamin, this seems to represent the technic best adapted for the class of cases encountered in the usual hospital medical service.